2006

MITSUBISHI ELECTRIC

Service Manual

DLP PROJECTION HDTV

V33 CHASSIS

WD-57731

Pb Solder

V33 Chassis

WD-52631

WD-57731

WD-65731

CAUTION:

Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

- **Power Input** : AC 120V, 60Hz
- **Power Usage** : See table on page 5
- **Light Engine** : DLP™ (1920 x 1080 pixels)
- **Light Source** : 150W (52, 57 & 65" models)
- **Channel Range** : Air VHF - 2~13, UHF - 14~69
  Analog Cable - 1~125
  Digital Cable - 1~135
- **Antenna Input** : 2 RF 75Ω unbalanced
- **Tuning (V33)** : 1 NTSC/ATSC/QAM
  1 Out of Band for CableCARD™
  (WD-57731 & WD-65731 Only)
- **Cabinet Dimensions** : See Table on page 5
- **Weight** : See table on page 5
- **Speakers (4Ω 10W)** : Two 5.75"x2.4" Oval

- **Input Level** : VIDEO IN JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO IN JACK (RCA Type)
  -4.7dBm 43kΩ unbalanced
  : S-VIDEO IN JACK
  (Y/C separate type)
  Y:1.0 Vp-p C:0.286Vp-p(BURST)
  75Ω unbalanced
  : COMP / Y, Cr, Cb (RCA Type)
  Y: 1.0 Vp-p Cr, Cb: 700mVp-p
- **Output Level** : VIDEO OUT JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO OUT JACK (RCA Type)
  -4.7dBm 4.7kΩ unbalanced
- **Digital** : IEEE-1394 I/O Jacks
  : AC-3 Digital Audio Output
  (RCA Type)
  : HDMI™
  : DVI-I

Pb Solder : Lead-Free solder PWBs

- Design specifications are subject to change without notice.

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.

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CONTENTS

INTRODUCTION 5
Dimensions, weight, power usage, etc. 5

PRODUCT SAFETY NOTICE 5

SAFETY PRECAUTIONS 6

DISASSEMBLY 7
Rear Cover Removal 7
Chassis Removal and Disassembly 7
Optical Engine Removal 11
WD-52631 Front Disassembly 12
WD-57731 & WD-65731 Front Disassembly 13

SERVICING THE LENTICULAR LENS AND FRESNEL SCREEN 14
Lenticular Screen and Fresnel Lens Removal and Replacement 14

ADJUSTMENTS 15
Option Menu, Remote Control and Digital Signal Strength 15
Initialization 16
Defaults 17
LED Indicator Diagnostics 19
Error Codes Operational Check 19
Error Codes List 20
Lamp Troubleshooting 20
Lamp Control diagram 21
Lamp Switch Disabling 21
Lamp Troubleshooting Flow Chart 22
CableCARD™ Troubleshooting 23
Service Adjustment Mode 24
Service Adjustment Mode Operation 24
Transferring data 25
Optical Engine Adjustment 26
Test Signal activation 26
Preliminary 26
Rotation and Keystone Distortion Adjustment 28
After completing Light Engine Adjustments 28
Horizontal & Vertical Position 29

USING LEAD FREE SOLDER 30

CHIP PARTS REPLACEMENT 31

REPLACEMENT PARTS 32
Parts Ordering 32
Critical and Warranty Parts Designation 32
Parts Tolerance Codes 32
Quick Reference List 33

SERVICE PARTS LIST 34

SCREEN ASSEMBLY PARTS LIST 41

CIRCUITRY BLOCK DIAGRAMS 42
Main Power Supply 42

xHD5 Light Engine & Fan Power Supplies 43
PWB-SIGNAL Video Path 43
PWB-DM Video Path 44
Sound Select Circuitry 45
Sound Signal Path 46
Overall Control Circuitry 47
Command Input Circuitry 48
Lamp Control Circuitry 49
xHD5 Engine Protect Circuitry 50
Short Protect Circuit 50
Auto Input Detection 51
Power Distribution 52

SCHEMATIC DIAGRAMS .....

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INTRODUCTION

This service manual provides service instructions for the V33 chassis. The specific models for this chassis type, dimensions and weight are listed below. Service personnel should read this manual thoroughly before servicing these chassis.

MODEL	CHASSIS	HEIGHT	WIDTH	DEPTH	WEIGHT	POWER USAGE
WD-52631	V33	33.3"	47.1"	17.1"	87.2 lbs	250W
WD-57731	"	36.3"	51.5"	18"	96 lbs	250W
WD-65731	"	40.8"	58.5"	19.8"	103.7 lbs	250W

This service manual includes:

1. Assembly and disassembly instructions for cabinet and chassis components.
2. Servicing of the Lenticular Screen and Fresnel Lens.
3. Servicing printed circuit boards (PCBs).
4. Electrical and Mechanical adjustments.
6. Chip parts replacement procedures.
7. Circuit path diagrams.

The parts list section of this service manual includes:

1. Cabinet and screen parts.
2. Electrical parts.

Schematic and block diagrams of the above listed models are included in this service manual for better understanding of the circuitry.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this service manual.

Electrical components having such features are identified by shading on the schematic diagram and parts list of this service manual, and by marking on the supplementary sheet for this chassis to be issued subsequently. **Therefore, the replacement for any safety part should be identical in value and characteristics.**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. When service is required, observe the original lead dress. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

SAFETY PRECAUTION

To protect your eyes, do not look directly into the lamp, or light coming directly from the lamp, lens or mirror.

Leakage current check

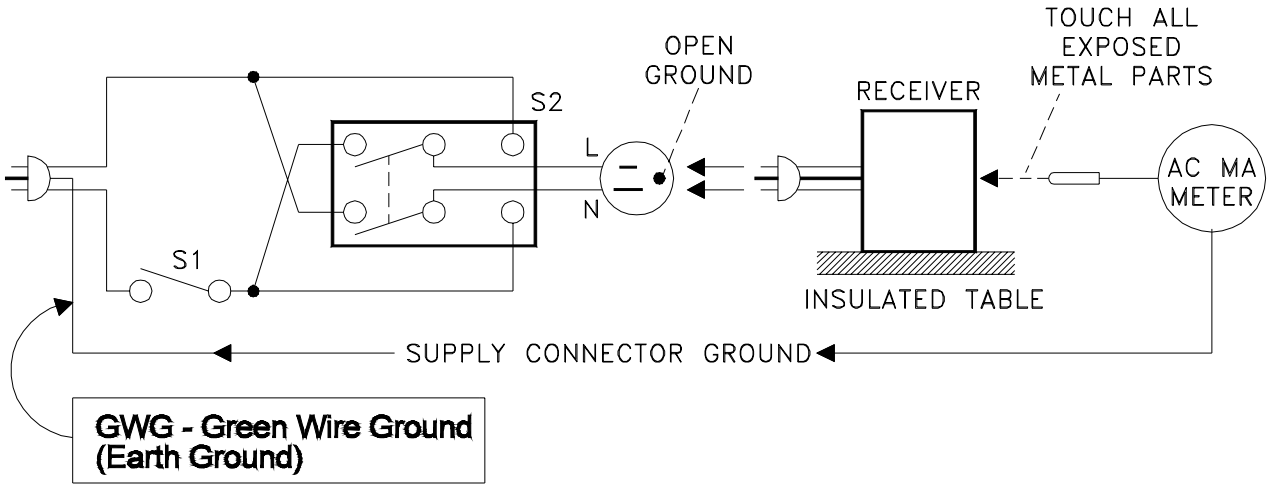
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. *Cold Check*

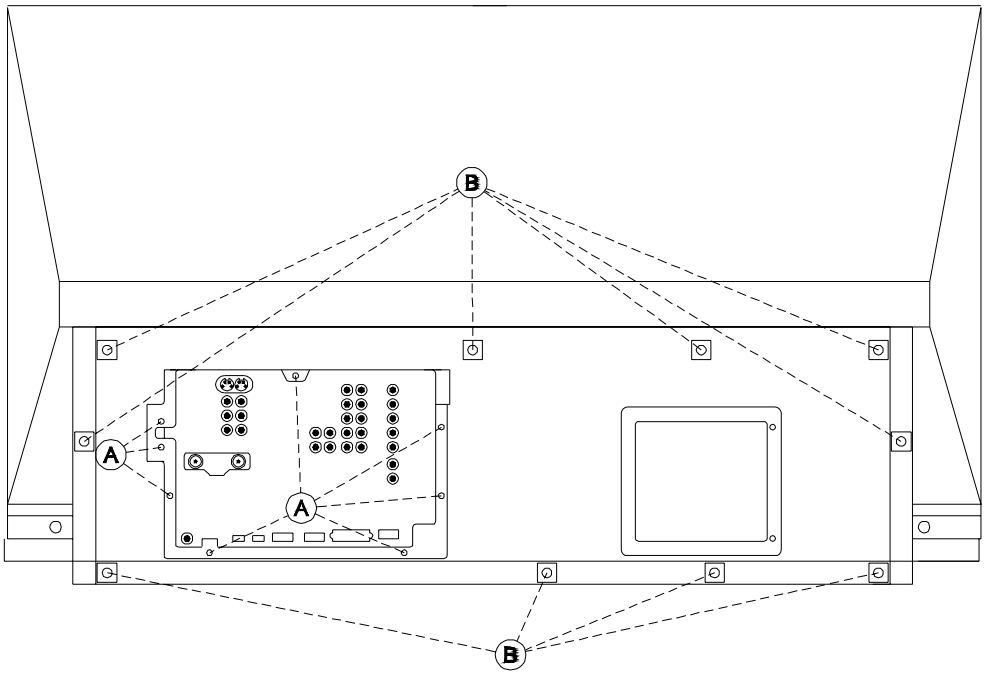
   With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1 Meg Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

2. *Hot Check ...Use the circuit shown below to perform the hot check test.*

   1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
   2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliampere (mA).**



Rear Cover Removal



Rear Cover Removal Procedure

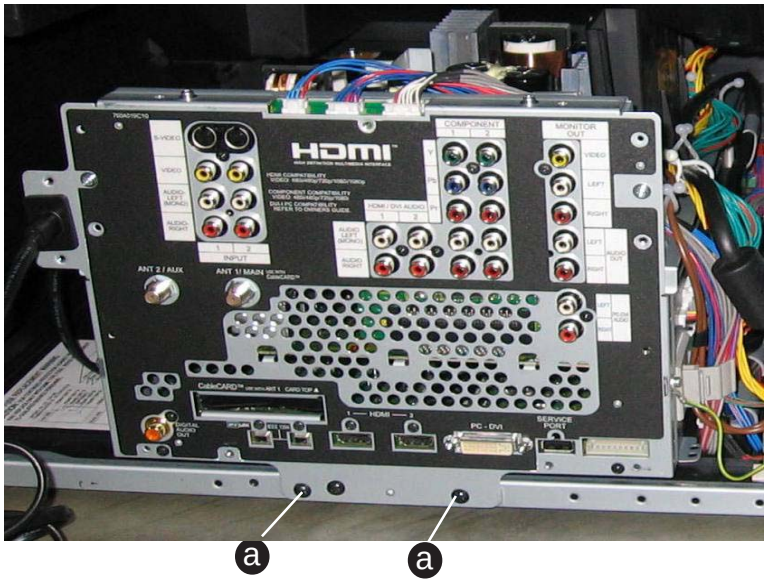
1) Remove 8 screws (A) from the External Input frame.
2) Remove 10 screws (B) from the rear cover.
3) Pull the rear cover from the TV.

Img_0184.jpg

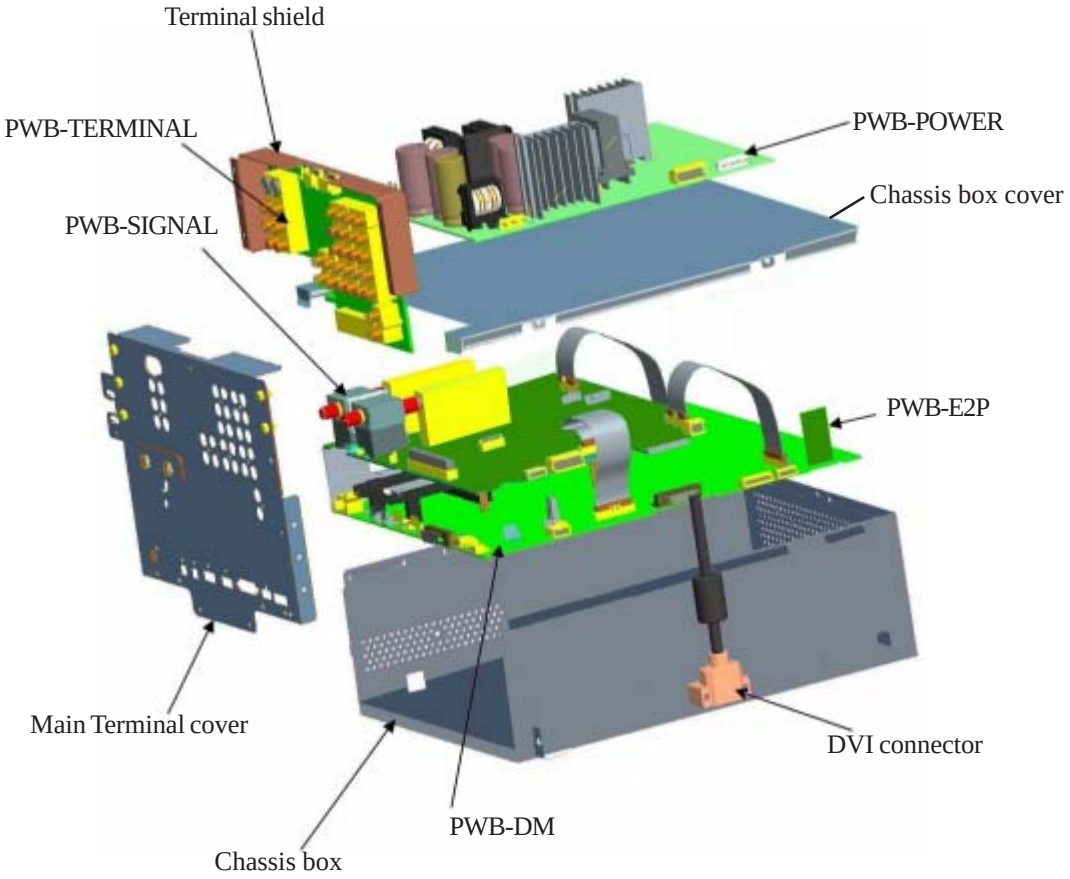
Chassis Disassembly

Chassis Removal from Cabinet

1) Remove two screws (a)
2) Disconnect all cables connecting to the chassis.
3) Carefully slide the chassis out of the Cabinet.

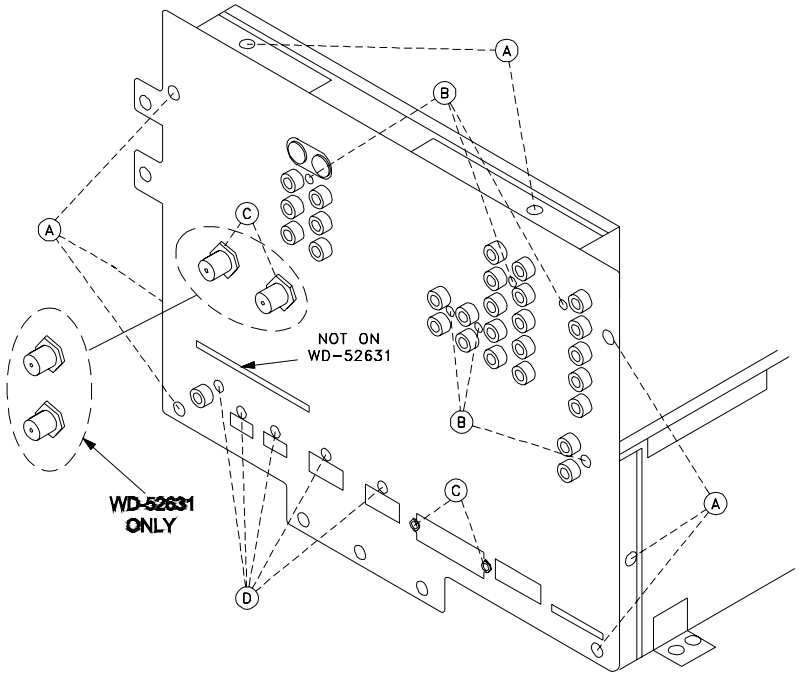


Chassis (Exploded View)



Main Terminal Shield Removal

1) Remove 8 screws (A), 6 screws (B) and 5 screws from the Terminal Shield.
2) Remove 4 nuts (C).
3) Pull the Terminal Shield from the chassis.



PWB-TERMINAL Removal

After removing the Terminal Shield:

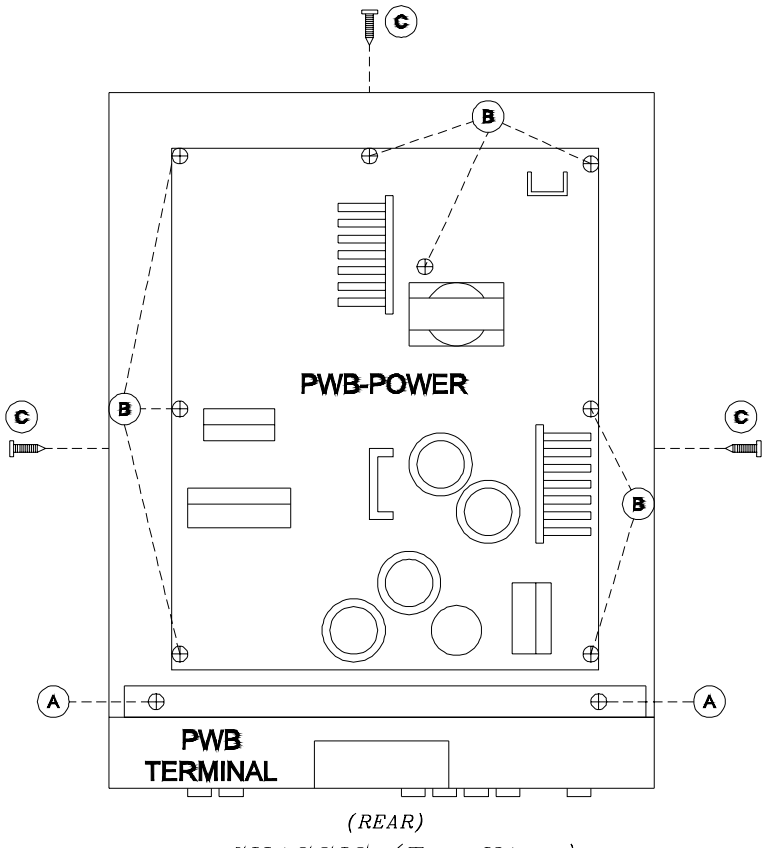
1) Remove 2 screws (A) from the Terminal Cover.
2) Carefully pull upward to remove the PWB-TERMINAL and Cover from the chassis.

PWB-POWER Removal

1) Disconnect all lead to the PWB-POWER.
2) Remove 8 screws (B) from the PWB-POWER.
3) Lift the PWB-POWER from the chassis..

Chassis Box Top Cover Removal

1) Remove 3 screws (C).
2) Lift the cover from the chassis box.

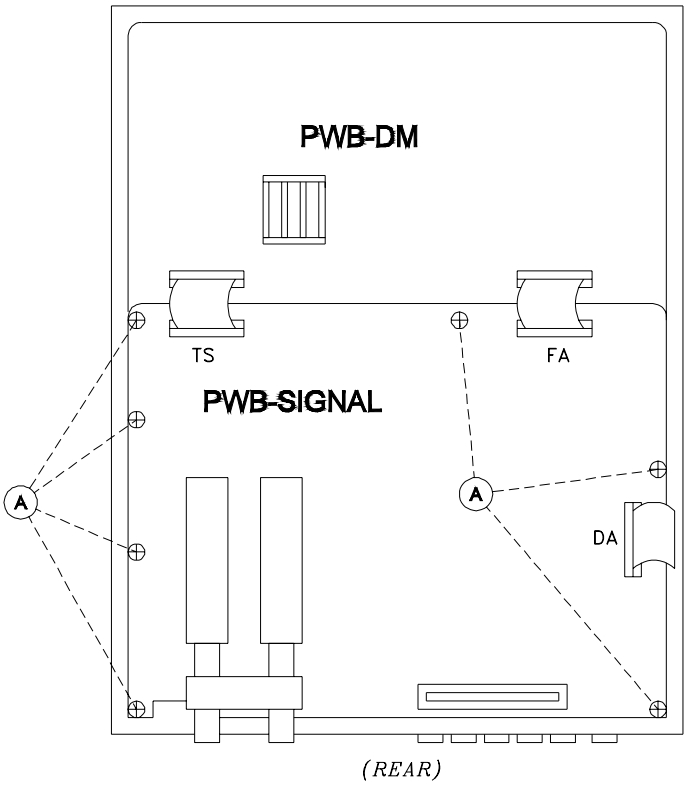


Chassis (top view)

PWB-SIGNAL Removal

After removing the PWB-POWER and the chassis box cover:

1) Remove 7 screws (A) from PWB-SIGNAL.
2) Disconnect all cables going to the PWB-SIGNAL.
3) Lift PWB-SIGNAL from the chassis box.



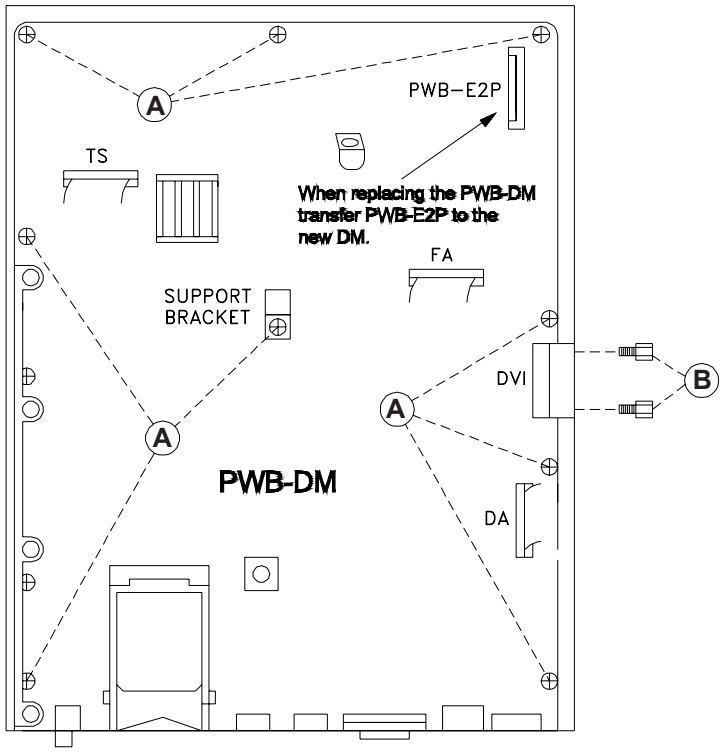
Chassis (top view)

PWB-DM Removal

After removing PWB-SIGNAL:

1) Remove 9 screws (A) from the PWB-DM.
2) Remove 2 hex screws (B) from the DVI connector.
3) Lift the PWB-DM from the chassis box.

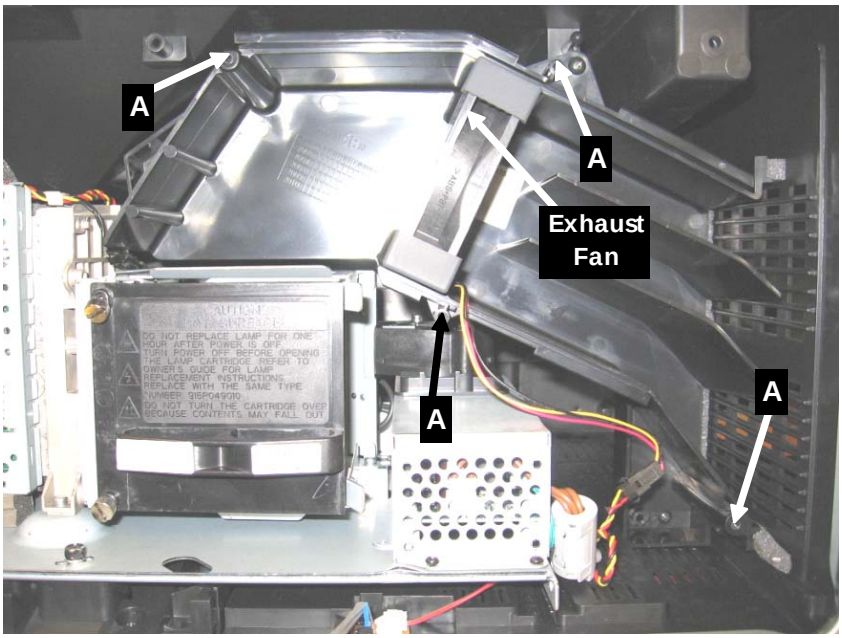
If PWB-DM is replaced, transfer the PWB-E2P from the old DM to the new DM.
Then perform the data transfer procedures "Copy Light Engine E2PROM to DM" and "Download WB Alignment to FMT" described on page 25.

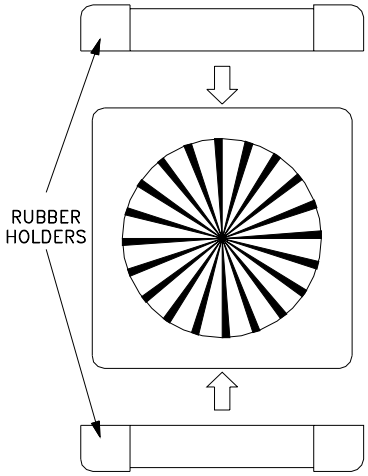


Chassis (top view)

Exhaust Fan Replacement

1) Remove 4 screws (A) and remove the exhaust duct cover.
2) Slide the Exhaust Fan from the duct and unplug the JF connector.
   Note: Save the rubber cushions, they do not come with a new fan.
3) When installing the fan ensure the leads come out the bottom of the fan as shown in the picture.



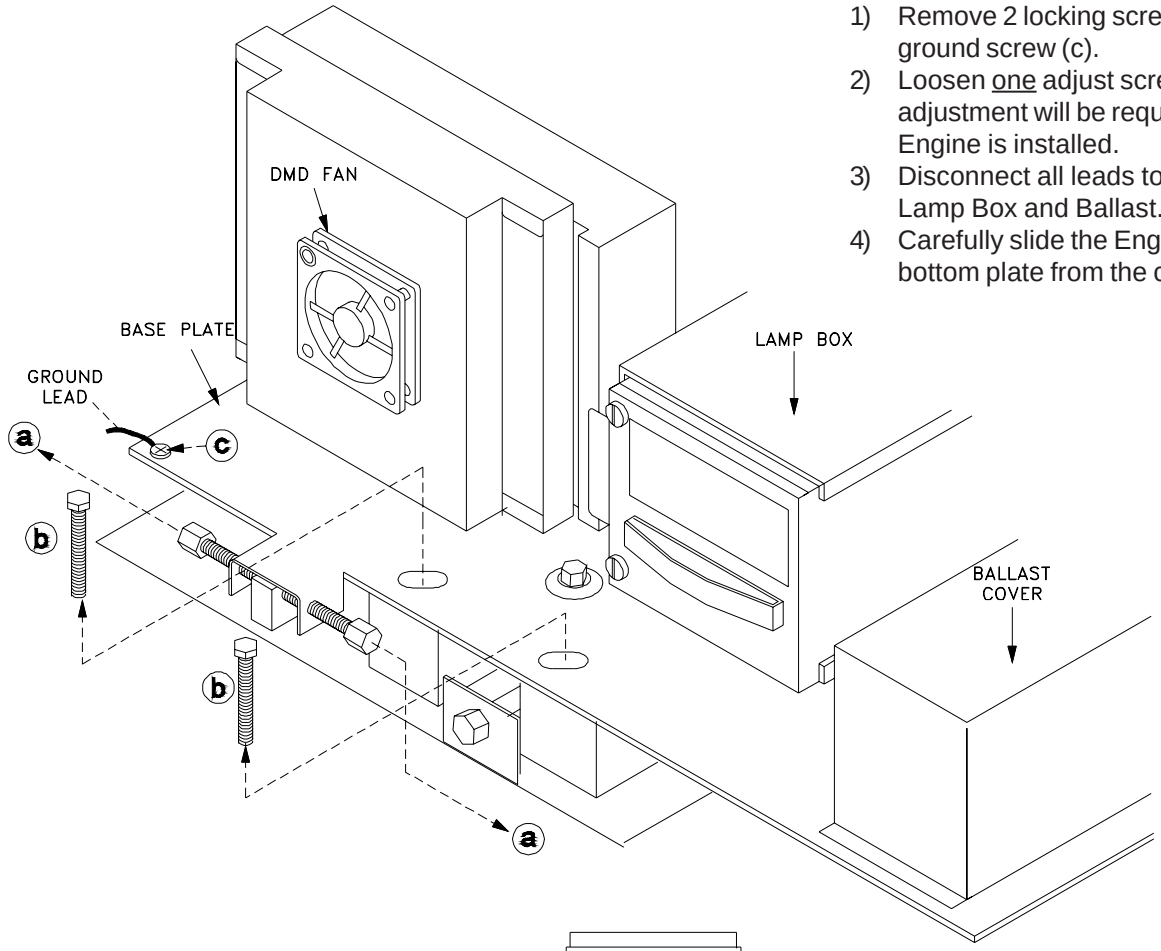


Optical Engine Removal

Engine (xHD5) Removal from cabinet

xHD5 Engine Removal Procedure

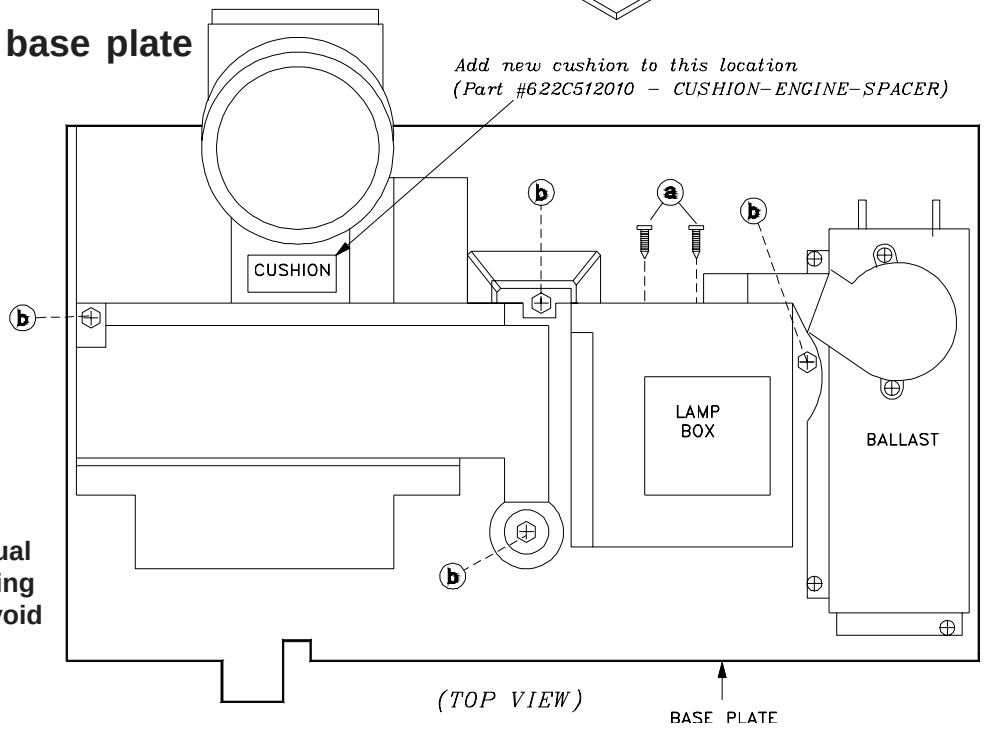
1) Remove 2 locking screws (b) and ground screw (c).
2) Loosen <u>one</u> adjust screw (a). Less adjustment will be required when the Engine is installed.
3) Disconnect all leads to the Engine, Lamp Box and Ballast.
4) Carefully slide the Engine, with the bottom plate from the cabinet.



Engine Removal from base plate

Removing the xHD5 Engine from the Plate

1) Remove the 2 screws (a), and 4 screws (b).
2) Carefully lift the engine from the base plate.
3) Add a new cushion behind the lens.



After Replacing Engine Copy Engine Data to DM

Refer to data transfer on page 24.

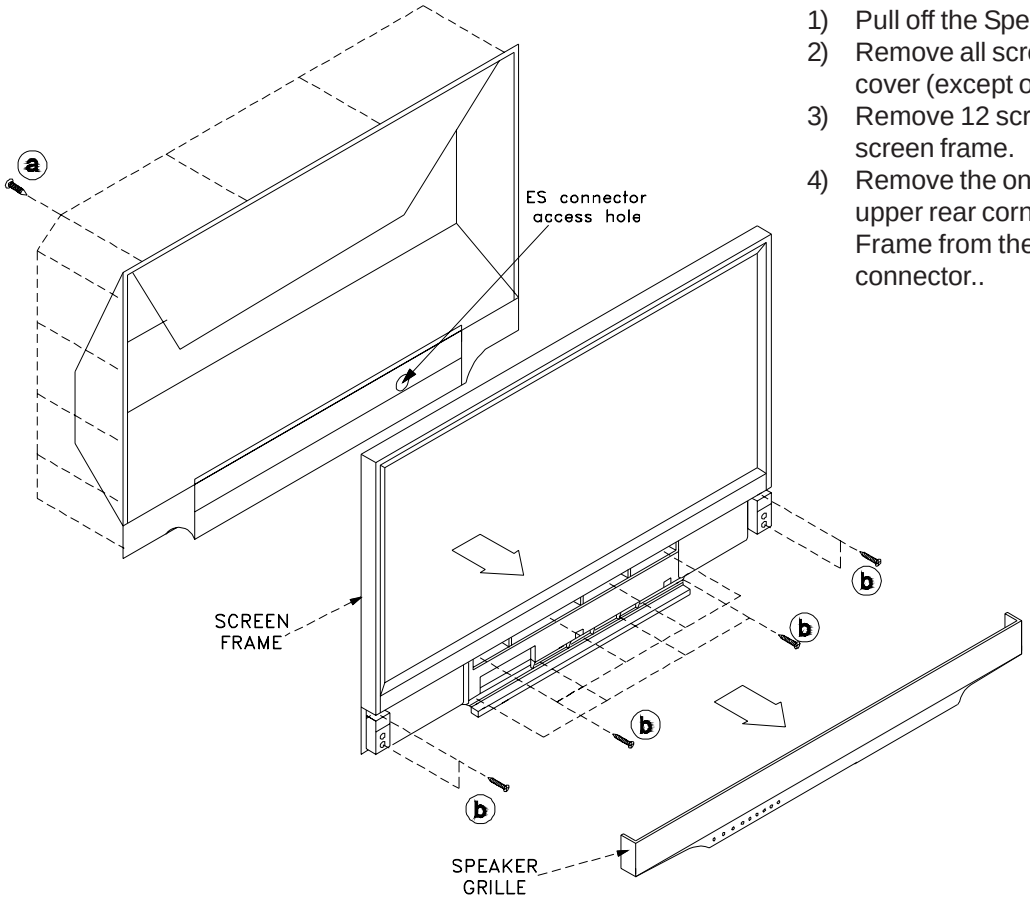
Note: The Engine has no individual service parts available. Attempting to disassemble the Engine may void the warranty.

NOTE: After Engine replacement, verify the foam gasket around the lens is properly positioned and that it does not block the light path. The side portholes of the cabinet can be used for visual confirmation.

WD-52631 Models Front Disassembly

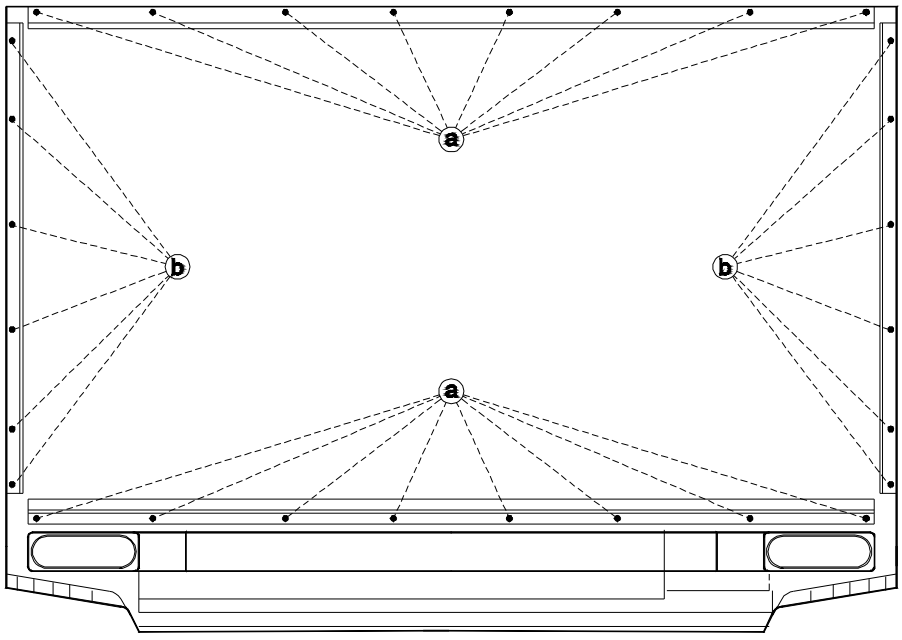
52” Models Screen Frame Removal

1) Pull off the Speaker Grille.
2) Remove all screws (a) from the upper rear cover (except one at an upper corner).
3) Remove 12 screws (b) from the front of the screen frame.
4) Remove the one remaining screw (a)at the upper rear corner. Carefully pull the Screen Frame from the TV and unplug the ES connector..



WD-52631 Screen Removal from the Frame

1) From the rear of the Screen Frame remove 16 screws (a) from the top and bottom rails.
2) Remove 6 screws (b) from each side rail.
3) Carefully lift the Screen assembly from the Frame.

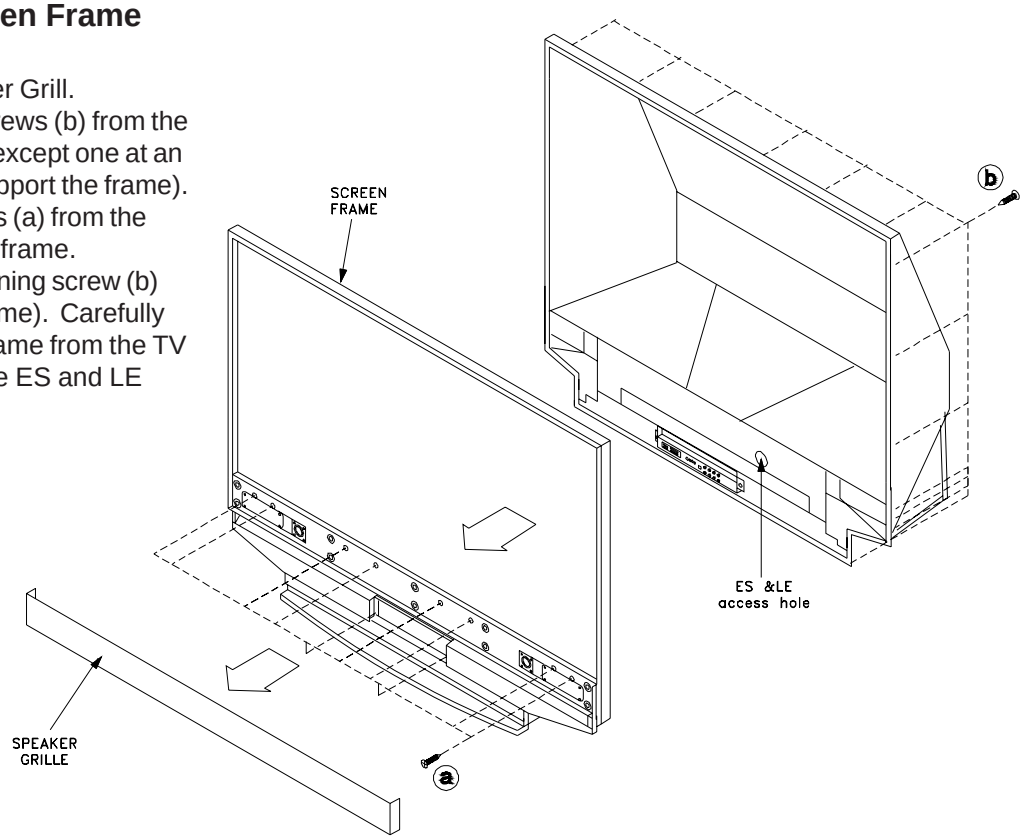


Screem Frame (Rear VIew)

WD-57731 & WD-65731 Front Disassembly

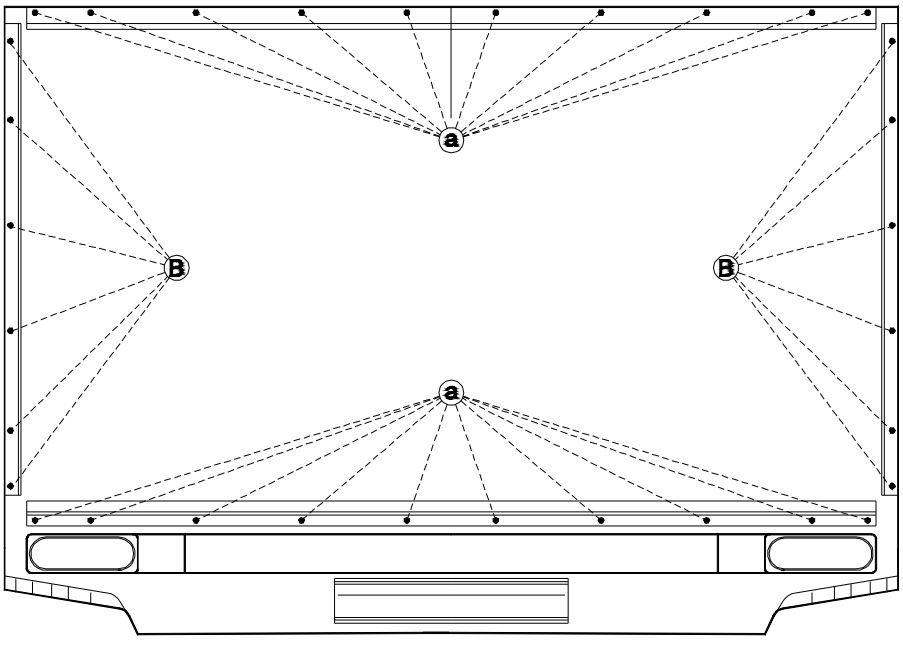
57” & 65” Models Screen Frame Removal

1) Pull off the Speaker Grill.
2) Remove all the screws (b) from the upper rear cover (except one at an upper corner to support the frame).
3) Remove 10 screws (a) from the front of the screen frame.
4) Remove the remaining screw (b) (supporting the frame). Carefully pull the Screen Frame from the TV and disconnect the ES and LE connectors.



57” & 65” Models Screens Removal from Frame

1) From the rear of the Screen Frame remove 20 screws (a) from the top and bottom rails
2) Remove 6 screws (b) from each side rail.
3) Carefully lift the Screen assembly from the Frame.



Screem Frame (Rear VIew)

Screen Replacement

CAUTION: **Wear gloves** when handling the Lenticular Screen and Fresnel Lens. This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun**. This may cause fire and heat related injuries.

Lenticular Screen and Fresnel Lens Removal

1) Remove the top, bottom and side HOLDER-SCREEN rails and their cushions from the Screen Frame.
2) Lift the screens as a single unit from the frame.
2. Separate the Lenticular Screen and Fresnel Lens.

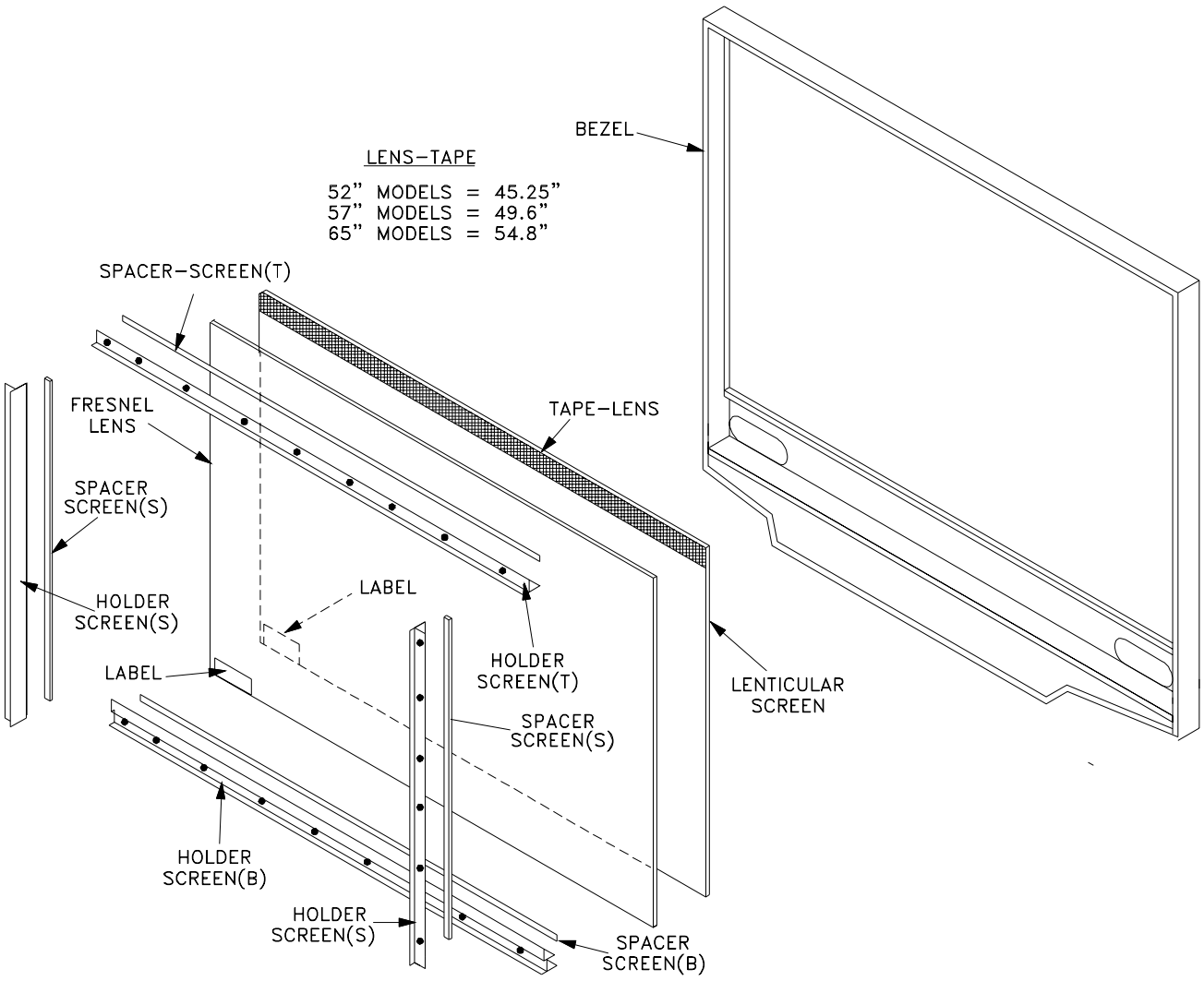
Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.

Lenticular Screen and Fresnel Lens Replacement

1) Apply LENS-TAPE along the rear top edge of the Lenticular Screen.
2) Place the Fresnel Lens on top of the Lenticular Screen, and apply pressure along the top edge.
3) Place the screens in the screen frame and reinstall the cushions, top, bottom and side rails.

NOTE: The Lenticular Screen label must face the front and the Fresnel Lens label face the rear.

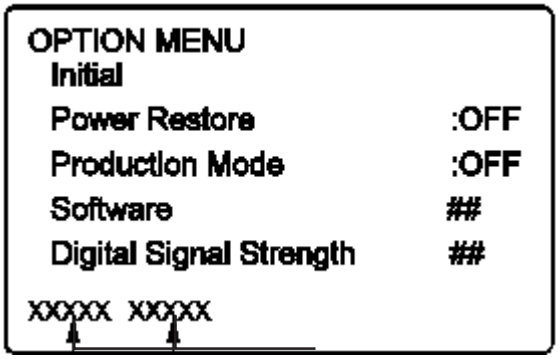
4) Reverse the Screen Removal Procedure and insert the screens in the Bezel.



OPTION MENU

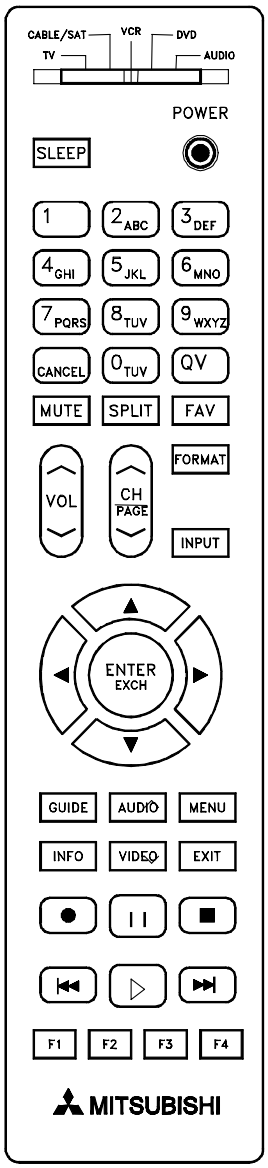
1. Press the “MENU” button on the remote hand unit.
2. Press the buttons “2”, “4”, “7” and “0” in order.
   (The screen will change to the option menu.)

MENU-2-4-7-0



Total Lamp ON Time

V33 REMOTE CONTROL



V33 Remote Button Name Changes

Previous Model Name	New Name
HOME	EXIT
PIP/POP	SPLIT
SQV	FAV
DEVICE	INPUT

Digital Signal Strength

1. Tune to a Digital Channel
2. From the Option menu scroll down and highlight Digital Signal Strength
3. Press Enter

Example using CableCARD on ANT1

Signal Quality Index (0-100)

Signal Noise Ratio

	Tuner 0	Tuner 1	OOB Tuner
Frequency(MHz):	597	0	75.2
Signal Level:	8	0	0
Modulation:	256 QAM	Unknown	
Carrier Lock:	Locked	Unknown	Locked
SQI:	100	0	
SNR:	34.3	0	23.77
Correctable errors:	0	0	
UnCorrectable errors:	0	0	

SNR Recommended Levels:

VSB = 15 to 35
64 QAM = 22 to 34
256 QAM = 27 to 37

Front Panel Initialization (new in the V33)

While the unit is ON, pressing the FORMAT and INPUT buttons simultaneously will immediately start the Initialization sequence. The TV will reboot once the initialization sequence is completed. Front Panel Initialization will reset ALL user settings to the factory setting.

SERVICE TIP:

Many customer generated symptoms, intermittent symptoms or no symptom found can be resolved by system reset or initialization. Before visiting the customer's home ask the customer 1st to try the System Reset button on the control panel and if this does not resolve the issue, then they can use the front panel initialization by pressing the FORMAT and INPUT buttons simultaneously

NOTE: During Initialization, the set will reboot. Wait until the Power LED stops flashing before unplugging or powering ON the TV.

RESET / INITIALIZE GUIDE

Reset Name	When to use	How to use	Resulting Action
Remote Control TV Layer Reset	Returns the remote control TV layer to normal operation.	(1) Set the slide switch to **TV** position. (2) Press and hold the **POWER** button until it flashes twice then release the button. (3) Enter the code **0 0 9 3 5**.	Once the valid code has been entered and confirmed, the remote control has been reset.
Remote Control TV Volume/Mute functions	Returns the volume and mute functions of the remote control to TV volume and mute for TV, Cable/Sat, VCR and DVD layers after the audio lock for AV Receivers feature has been used.	(1) Set the slide switch to **TV** position. (2) Press and hold the **POWER** button until it flashes twice then release the button. (3) Enter the code **9 9 3 VOL UP**.	The remote will now operate the TV's volume and mute when the slide switch is in the TV, CABLE/SAT, VCR or DVD positions.
A/V Memory Reset, single input	When the audio and or video settings for a single input seems to incorrect	**MENU --> Audio/Video--> AV Reset**	All Audio and Video settings for the individual input are reset except for the *Listen To* and *Language,* audio *Balance* and *Closed Caption* settings.
A/V Reset, all inputs	To reset audio and video adjustments for all inputs to the original factory settings.	While viewing the TV, press the front panel buttons **GUIDE** and **FORMAT** at the same time.	All Audio and Video settings including *Listen To* and *Language* , *Closed Captions* settings and *Format* settings are returned to the original factory settings.
System Reset	To reset the TV when it does not turn on or off, does not respond to the remote control, front panel buttons or has audio but no video.	Press the **SYSTEM RESET** button on the front panel with a pointed object such as the point of pencil or end tip of a paperclip.	The changes you made most recently, before using the SYSTEM RESET, may be lost. Changes you made previously, however, are not lost.
TV Reset	To reset all customer settings	Press **MENU-1-2-3-ENTER**	All customer settings except V-Chip are reset.
Initialize - User Level	To reset all consumer adjusted settings and memories to the original factory defaults.	Press **FORMAT** and **INPUT** buttons on the front control panel at the same time.	All memories and settings outlined in the Owner's Guide will need to be set again.
Initialize - Service Level	To reset all consumer adjusted settings and memories to the original factory defaults.	**MENU + 2470**. Highlight **INITIALIZE** and press **ENTER**	All memories and settings outlined in the Owner's Guide will need to be set again. Also erases V-CHIP password
Factory Restore	To recover from data/adjustment errors in the ISF menu	**MENU + 2457 + 0**. Highlight RESTORE FACTORY DEFAULTS and press ENTER	All service, user, ISF data is set back to factory defaults.

INITIAL DEFAULT SETTINGS

Setup Menu	
Language (Idioma)	English
Memorize Channels	--
Ant1 Air	--
Ant1 Cable	--
Ant2 Air	--
Ant2 Cable	--
Clock	
Clock Setting	Manual
Time	12:00PM
Date	1/1/2006
Time Zone	Eastern
Daylight Savings	Applies
Timer	Gray out
Timer	Off
Day	Daily
Time	12:00PM
Device	ANT-1
Channel	2
Demo mode	Grey out (mode off)
Software Version	V33 XXX.XX

Clear Thought Menu	
Edit	Review
Input Name	--
Input-1	--
Input-2	--
Inout-3	--
Comp-1	--
Comp-2	--
HDMI-1	--
HDMI-2	--
AV Receiver Setup	Off, Learn&Connect buttons grayed out
Icon Order	Ant-1, Ant-2, Input-1, Input-2, Input-3, Comp 1 & Comp-2
PC DVI	Digital

Record	
Record	
Channel	2
Record to	--
Duration	1 hr.
Start Time	--
Day	--
Record List	--

Channel	
Antenna	1
Channel	2
Memory	Added
Name	Blank
FAV	Blank
Signal Strength	(Depends on digital source)

Captions Menu	
Analog Captions	On if Mute
Background	Gray
Digital Captions	On if Mute
Appearance	Default
Digital Settings	
Font	Font 3
Size	Large
Color	White
Background	Black
Opacity	Translucent

Parent Lock Menu	
U.S Ratings	
US Ratings	Off
TV Rating	TV-PG
FV-Fantasy Violence	unchecked
D-Sexual Dialog	unchecked
L-Adult Language	unchecked
S-Sexual Situations	unchecked
V-Violence	unchecked
Programs Not Rated	unchecked
Movie Rating	PG
V-Chip Time	
Start	12:00pm
Stop	12:00pm
Other Ratings	
Other ratings	Off
Rating Group	TBD
Rating	TBD
Lock by Time	Off
Lock Time	12:00pm
Unlock Time	12:00pm
Front Panel Lock	Off

Audio/Video	
A/V Memory Reset	Ant-1
Settings	
Audio	
Bass	50%
Treble	50%
Balance	50%
Surround	Off
Listen To (Analog Only)	Stereo
Level Sound	On
Language (Digital Only)	English
Video	
Picture Mode	Brilliant
Contrast	100%
Brightness	50%
Color	50%
Tint	50%
Sharpness	50%
Brilliant Color Temp	High
Perfect Color (DefineEdge)	Perfect color
Video Noise	Medium
Video Mute	On
TV Speakers	On
Film Mode	Auto
TV Volume	30%
DW Source	ANT 1 002
DW Position	Right half
PIP/POP Format	Double Window

Format	
Ant-1,2 (480I/480P)	Stretch
Ant-1,2 (HD Digital)	Standard
Input-1,2,3	Standard
Comp-1,2,3	Standard
HDMI-1,2 (Video)	Standard
1394 Devices	Standard
DVI-I PC	Standard

A/V DEFAULTS

A/V Memory	Ant 1 Ant 2	INPUT 1/2/3	COMP 1/2	1394 (connected)	HDMI 1/2 (Video)	DVI-I(PC)
Picture Mode	Brilliant	Brilliant	Brilliant	Brilliant	Brilliant	n/a
Brilliant Contrast	MAX	MAX	MAX	MAX	MAX	MAX
Brilliant Brightness	Center	Center	Center	Center	Center	Center
Color	Center	Center	Center	Center	Center	n/a
Tint	Center	Center	Center	Center	Center	n/a
Sharpness	Center	Center	Center	Center	Center	n/a
Color Temp.	High	High	High	High	High	High
Perfect Color	Manual/ Center	Manual/ Center	Manual/ Center	Manual/ Center	Manual/ Center	Manual/ Center
Video Noise	Medium	Medium	Medium	Medium	Medium	n/a
Film Mode (Auto)	On	On	On	N/A	On	n/a
Bass	Center	Center	Center	Center	Center	Center
Treble	Center	Center	Center	Center	Center	Center
Balance	Center	Center	Center	Center	Center	Center
Surround	Off	Off	Off	Off	Off	Off
Listen To	Stereo	n/a	n/a	n/a	n/a	n/a
Level Sound	On	On	On	On	On	On
Language (Digital Only)	English	n/a	n/a	English	n/a	n/a
Vertical Position	n/a	n/a	n/a	n/a	n/a	Center
Horizontal Position	n/a	n/a	n/a	n/a	n/a	Center
Fine Detail	n/a	n/a	n/a	n/a	n/a	Center

A. A/V Memory

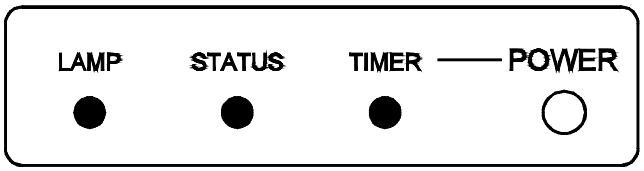
Each of the external inputs has it's own Audio/Video Memory. A change in an A/V setting at a specific input is stored in memory for that specific input.

B. A/V Reset

1. Pressing the front panel "GUIDE" and "FORMAT" buttons at the same time initializes all A/V Memories.
2. The AV Reset in the user's menu initializes only the selected input's A/V Memory.

LED Indicator Diagnostics

The front panel LEDs provide an indication of the set's operation, and the possible cause of a malfunction. There are three front panel LEDs, "Power", "Status" and "Lamp". The LED display shows the current status or indicates a possible malfunction.



NORMAL LED INDICATIONS

Power/Timer Indicator	Status Indicator	Lamp Indicator	Condition
Off	Off	Off	Off (standby)
Blinking green fast	Off	Off	Initialization (45-60 seconds)
Off	Off	Blinking green slow	Lamp cooling for 1 min after PTV off
Green	Off	Off	Power On
Blinking green slow	Off	Off	Power On Timer is set

ABNORMAL LED INDICATIONS

Power/Timer Indicator	Status Indicator	Lamp Indicator	Condition
Off	Yellow	Off	High Temperature - check ventilation air flow. Temperature sensor is disconnected.
Off	Off	Blinking yellow	Lamp cover is open.
Off	Off	Red*	Lamp failure Lamp fails to turn on Lamp turns off during P-On Lamp is broken
Off	Blinking Red	Off	Fan Stop
Off	Red.	Off	Circuit failure. (Run Error Code Check)

* A red Lamp LED only occurs after 3 attempts to light the lamp. Each attempt (pressing POWER) must be at least 65 seconds apart. During each attempt ballast striking may be audible.

3. Error Code Operational Check

Note: The TV must be in "Shut Down" and not have been switched Off, to perform the Error Code Operational Check. When the TV is switched Off, the code automatically resets to "12" No Error.

Pressing the front panel "INPUT" and "MENU" buttons at the same time, and holding for 5 seconds, activates the Error Code Mode. The "TIMER LED" flashes denoting a two digit Error Code, or indicating no problem has occurred since the last Initialization.

Note: The front panel buttons must be used, NOT those on the Remote Control.

- The number of flashes indicates the value of the MSD (tens digit) of the Error Code.
- The flashing then pauses for approximately 1/2 second.
- The LED then flashes indicating the value of the LSD (ones digit) of the Error Code.
- The Error Code is repeated a total of 5 times.
  Example: If the Error Code is "23", the LED will flash two times, pause, and then flash three times.

4. Error Codes

The Error Code designations indicating malfunction, or no malfunction, are listed below:

ERROR CODES	
Code	**Description**
12	No Error found
32	Lamp cover is open.
34(1)	Lamp turns Off while the TV is playing. (Lamp failure) (Lamp Enable signal from engine is lost)
36	Lamp ballast fan failed.
37	Engine (DLP) fan failed.
38	Lamp temperature abnormally high. Remove Lamp to check filter.
39	DMD temperature abnormally high.
42	Exhaust fan failed.
44	Check for disconnected DVI cable between PWB-DM and Engine.
48	Engine power supply short is detected.
57(2)	Ballast communication problem (ballast to chassis)
58	Signal Short is detected
59	DM short is detected
61(3)	No LAMP-EN output from the engine to the ballast
66(4)	Lamp did not turn on at P-ON sequence (No Lamp inserted) (Disconnected cable between ballast and lamp) (Lamp-Enable goes to DM but not to Ballast)

Code 34(1) - Lamp Enable is generated to activate the Lamp

Code 57(2) - Lamp Enable is generated during P-ON sequence, but no Lamplit signal is received from the Ballast.

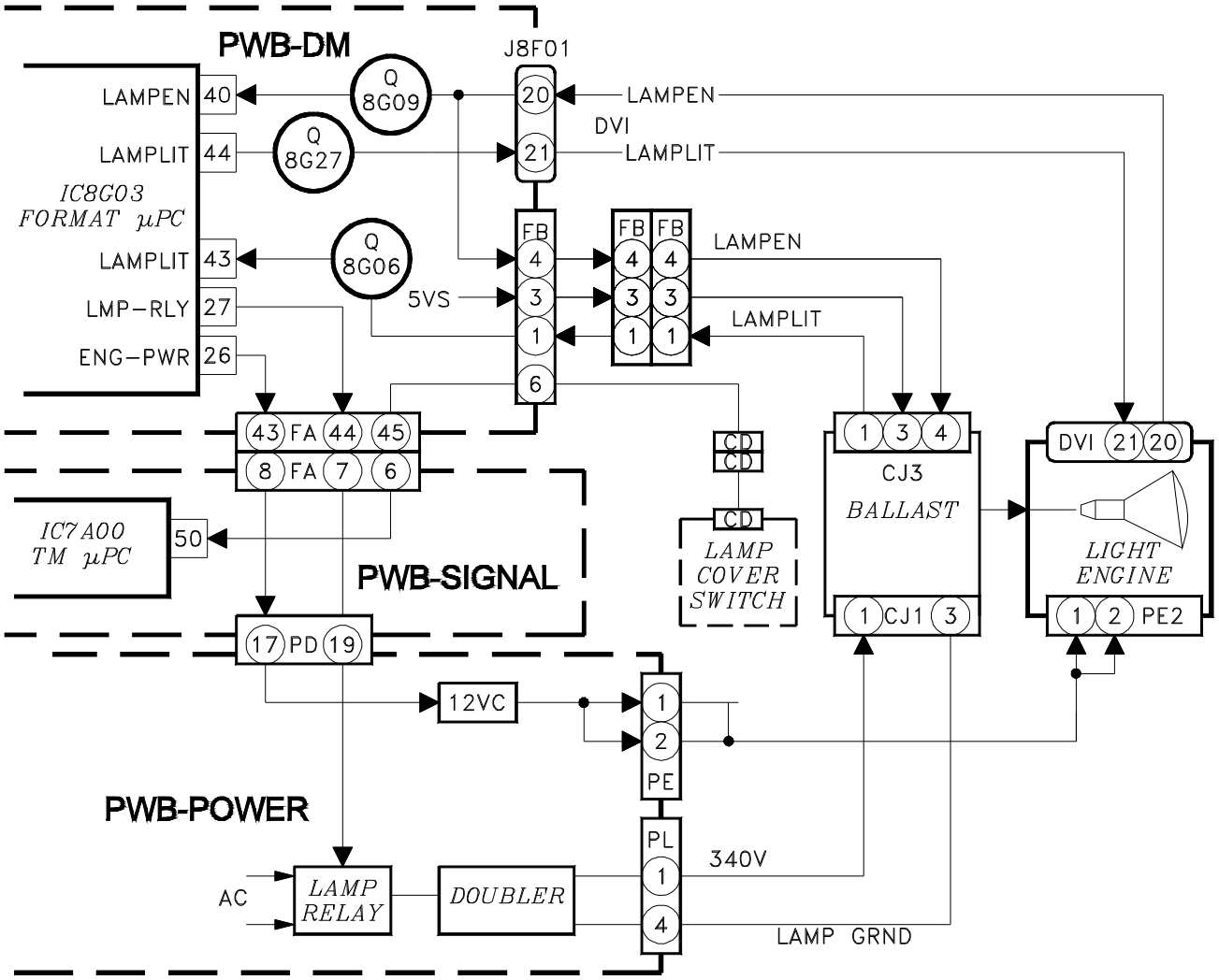
Code 61(3) - No Lamp Enable is received at the DM and Ballast.

Code 66 (4) - Lamp enable is received at the DM but not at the Ballast.

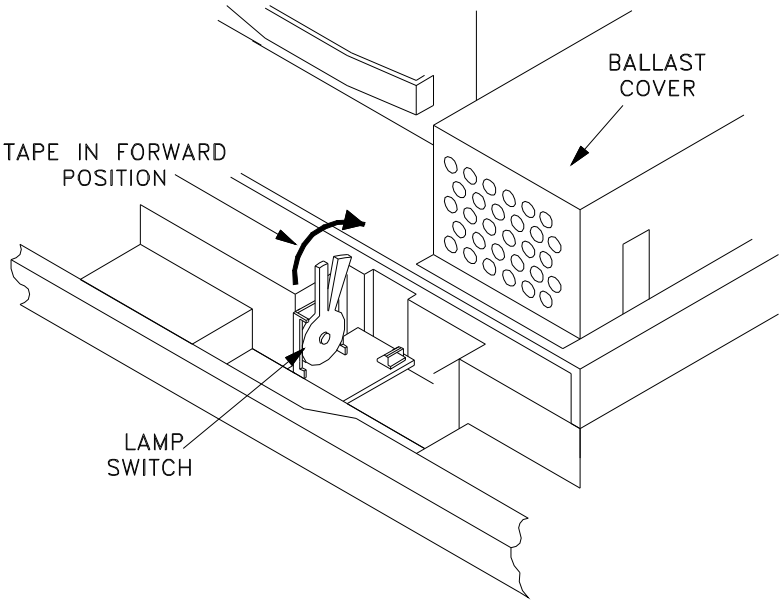
Lamp Troubleshooting

Use the above Error Code Table, the Lamp Control Block diagram, and the Troubleshooting flow chart on the following pages to determine is a lamp problem is due to the Lamp, Ballast, Power Supply or Light Engine.

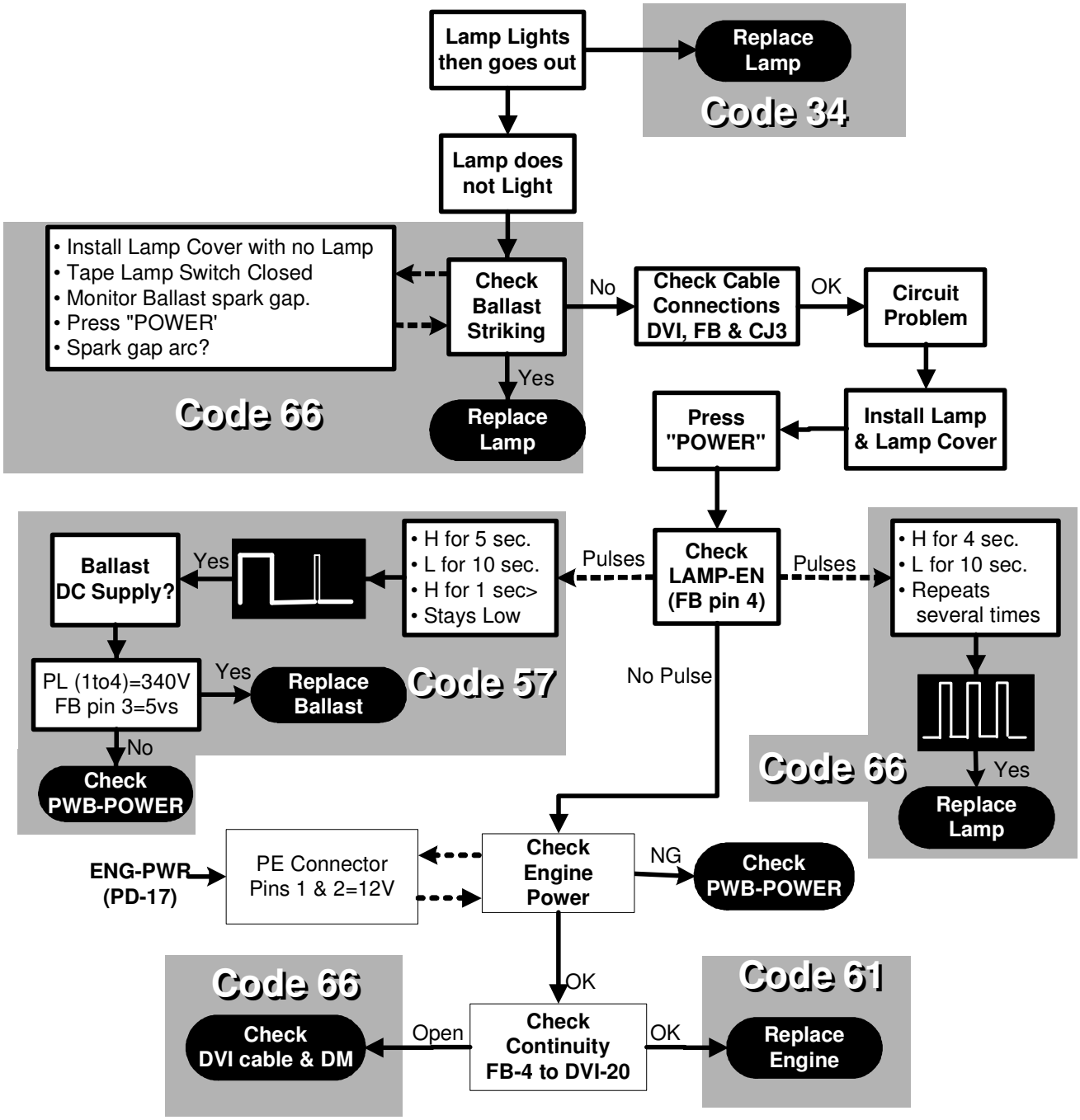
Lamp Control Block Diagram

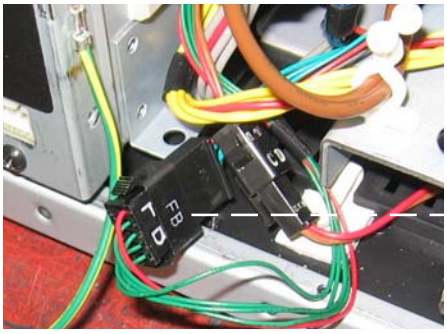


Disabling the Lamp Switch (when the back is removed)



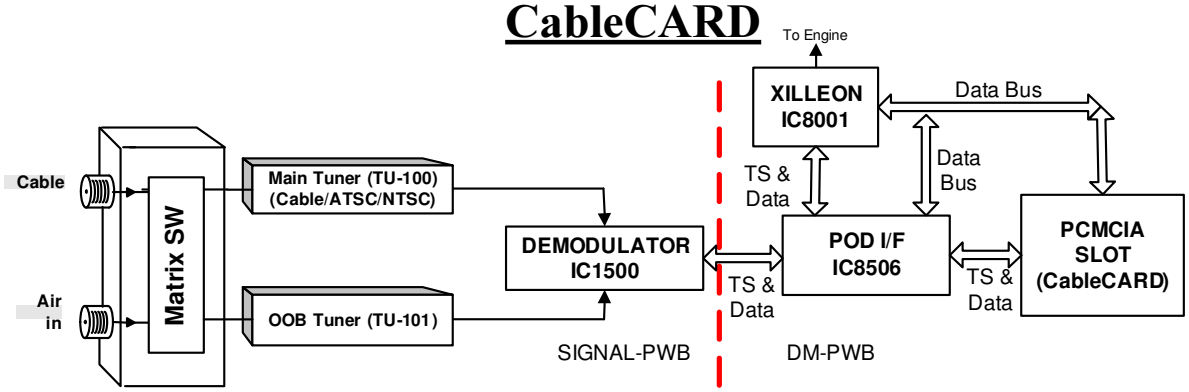
Lamp Troubleshooting Flow Chart





FB Interconnect

CableCARD



Cable providers send QAM64 and/or QAM256 through the coax cable to the TV's tuner. Once converted to IF it is demodulated to an MPEG transport stream (TS). If a card is present in the PCMCIA slot the TS will be passed to the card and returned back to IC8506 and then finally sent to the Xilleon processor. If there is no card present in the card slot and the tuner is tuned to a QAM channel the TS will pass directly from the POD interface IC directly to the Xilleon for processing.

Cable providers typically have both encrypted and unencrypted channels. If the Xilleon receives an encrypted TS it will ask the CableCARD to unscramble the stream. The card will only unscramble the TS if it receives the proper authorizations to do so. Those authorizations are received via Out-of-Band data (OOB). The OOB contains information about authorizations, channel maps and more.

	SYMPTOM	POSSIBLE CAUSE(S)	POSSIBLE RESOLUTIONS
1	No channel map appears when pressing guide button (TVGuide disabled)	Cable is not connected to ANT1 -or- OOB data is not received correctly	1) Verify cable is connected to ANT1 2) Re-install/Replace CableCARD 3) Verify signal level and signal noise level 4) Contact Service Provider 5) Check TU101 for proper function/Replace Signal PWB
2	Channel map does not change after card is installed. (still showing basic cable map)	CableCARD is not 'Initialized' within the service providers system.	Contact service provider
3	Host ID screen does not appear	Signal and information not received by TV	1) Verify cable is connected to ANT1 2) Re-install CableCARD 3) Replace CableCARD 4) Verify signal level and signal noise level
4	Error code received on screen. Error codes are listed such as 161-x	Communication between TV and card is lost or disrupted	1) Pull card from TV and wait 5 minutes. Then reinstall the card and verify it is initializing properly. 2) Press INPUT & FORMAT keys on the front panel. 3) Replace CableCARD with new card 4) Try 3rd CableCARD 5) Replace DM-PWB
5	Individual channel cannot be received. (example HBOHD is no video and no audio but other HBO channels are OK)	The TV has no means to block individual channels. Proper authorization is not received.	Contact service provider
6	Certain tier of channels is not received. (example: Premium channels or all HD channels not received)	Authorizations to display scrambled channels are sent via OOB data.	Contact service provider
7	Unable to tune to a channel. (example: Pressing 1055 has no response and stays on current channel)	1055 is not available in the channel map. Channel map is sent via OOB from the service provider.	Verify OOB is locked. If OOB is locked, verify channel should be received. If not locked, troubleshoot for OOB failure on SIGNAL PWB and/or with service provider.
8	When using SA card channels changing automatically and random message about upgrade in process. (Channels are often like 10,000 to 50,000)	CableCARD firmware is out of date and being upgraded by service provider.	If this process continues more than 60 minutes, contact the service provider for updated card
9	Periodically encrypted channels become unavailable.	Card is hung	Unplug card or AC or perform initialize
10	Only Analog channels can be viewed. All digital/encrypted channels are unavailable	Proper authorization is not received or TV cannot display digital video	1st test for QAM clear channel (often network channels are provided free), if no QAM clear channel is available remove the card and memorize channels. Verify that a digital channel can be viewed. If known digital channel cannot be viewed suspect SIGNAL
11	ChannelView does not list program content or channel call letters	This information is provided in the form of OOB data tables and is sent at the discretion of the service provider	Contact service provider

SERVICE ADJUSTMENTS

There are only 4 Service Adjustments required in these models:

Two Electrical Adjustments

- Horizontal Centering
- Vertical Centering

Two Mechanical Adjustments

- Picture Rotation
- Vertical Keystone Distortion

Measuring equipment and Jigs

- No additional Test Equipment is required.
- Conventional Electrical Hand Tools.

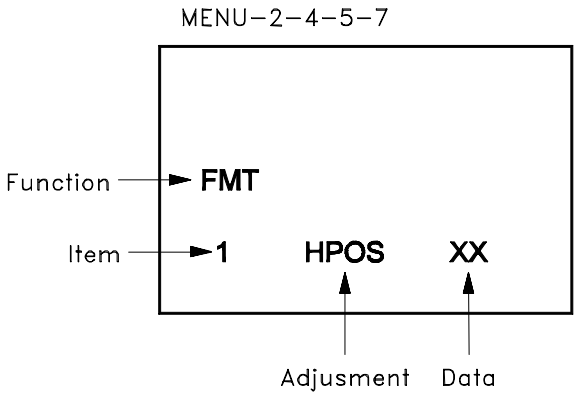
Test signal

An internally generated Test Signal is used, no additional external signals are required.

Circuit Adjustment Mode

On these models, the Circuit Adjustment Mode is used only for:

- Test Signal activation
- Horizontal Centering
- Vertical Centering the following adjustments may only be performed using the remote hand unit.



1. Activating the adjustment mode

1. Press the “MENU” button on a remote hand unit. (The “MENU” display will appear.)
2. Press the buttons “2”, “4”, “5” and “7” in that order. (The screen will change to the adjustment mode.) If not changed to the adjustment mode, repeat steps 1 and 2.

2. Test Signal Activation

When in the Circuit Adjustment mode, press “REWIND” on the remote control to activate the test pattern. This pattern is used for both electrical and mechanical adjustments.

3. Adjustment Function Selection

Use the “AUDIO” button to select a specific Adjustment Function.

NOTE: The only Service Function on these chassis is the “fmt” function.

3. Adjustment Selection

Use the “VIDEO” button to select a specific electrical adjustment, “1 HPOS” or “2 VPOS”.

4. Adjusting Data

After selecting an adjustment item, use the “UP” and “DN” buttons to change adjustment data.

- If the “UP” button is pressed, the adjustment data increases.
- If the “DN” button is pressed, the adjustment data decreases.

5. Saving data

Press “ENTER” to save the adjustment data in memory.
The display characters go red for approximately one second in this step.

Note: If the circuit adjustment mode is terminated without pressing “ENTER”, changes in adjustment data are not saved.

6. Terminating the circuit adjustment mode

Press the “MENU” button on the remote hand unit twice to terminate the adjustment mode, or press “EXIT” once.

Note: The adjustment mode can be also terminated by turning the power off.

Data Transfer

1) Enter the Service Adjustment Mode ... Press “MENU-2-4-5-7”
2) Press “0” when in the Service Mode ... Four choices appear at the top of the screen.

DATA TRANSFER

Display	Description
Copy Engine E2PROM to DM	Transfers Engine data to DM E2P (after DM or Engine replacement)
Restore factory data	Restores factory set values
DOWNLOAD WB ALIGNMENT TO FMT	Copies WB data from E2P to FMT (after PWB-DM replacement)_

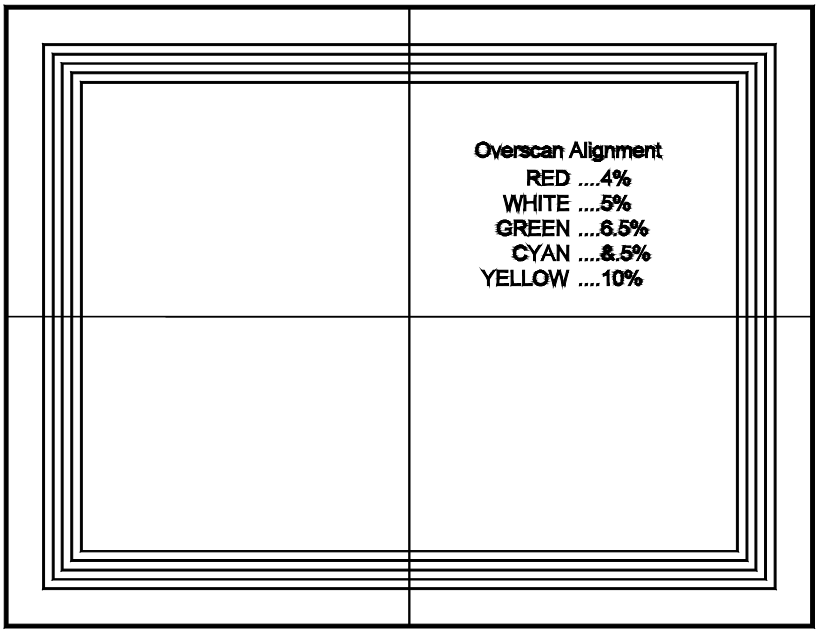
3) Use the UP & DN keys to highlight the desired choice, then Press “ENTER”

Optical Engine Adjustments

Test Signal Activation

1) Press “MENU-2-4-5-7” (Service Mode)
2) Press “FF/FWD” to activate the overscan pattern shown below.

NOTE: There are 2 sets of 16 test patterns to help evaluate the performance of the chassis. Press FF/FWD and REW/REV to toggle through the 16 patterns in each set. Press the Play button to toggle to the next set of patterns.

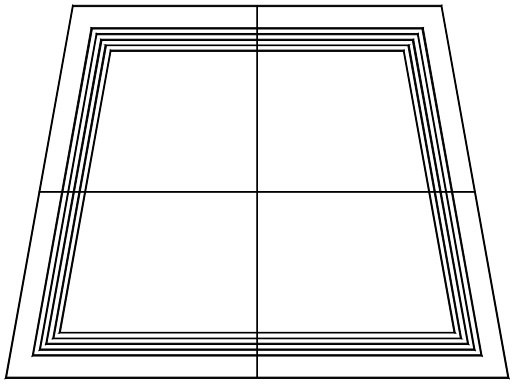


Required Tools

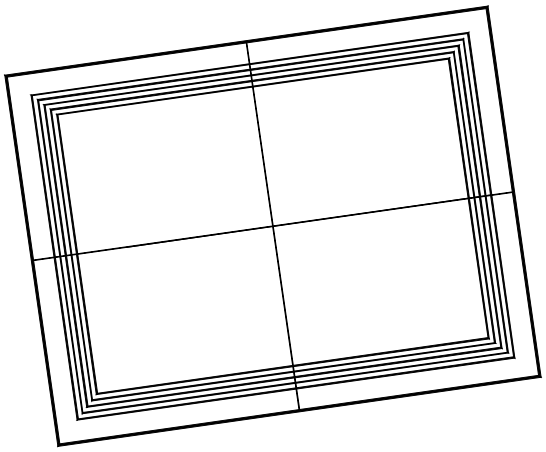
8mm wrench

Prelminary

The only disassembly required to perform Optical Engine mechanical adjustments is the rear cover removal.
There are two mechanical adjustments vertical keystone and picture rotation. Adjustments are made using the internal test pattern shown above.



VERTICAL KEYSTONE ADJUSTMENT



ROTATION ADJUSTMENT

Optical Engine Adjustments

Adjustment Procedure

1) Remove rear cover.
2) Tape the Lamp Switch closed *(Figure 1)*
2) Activate the internal Test Pattern "MENU-2-4-5-7" then press "FF/FWD".
3) Refer to *Figure 2* and loosen Locking Screws [A-1] through [A-4].

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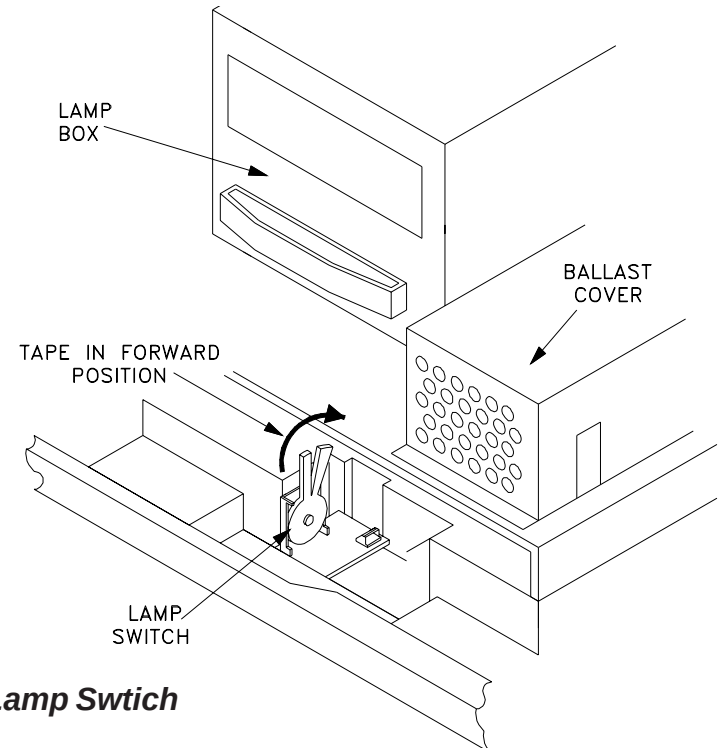


Figure 1: Lamp Swtich

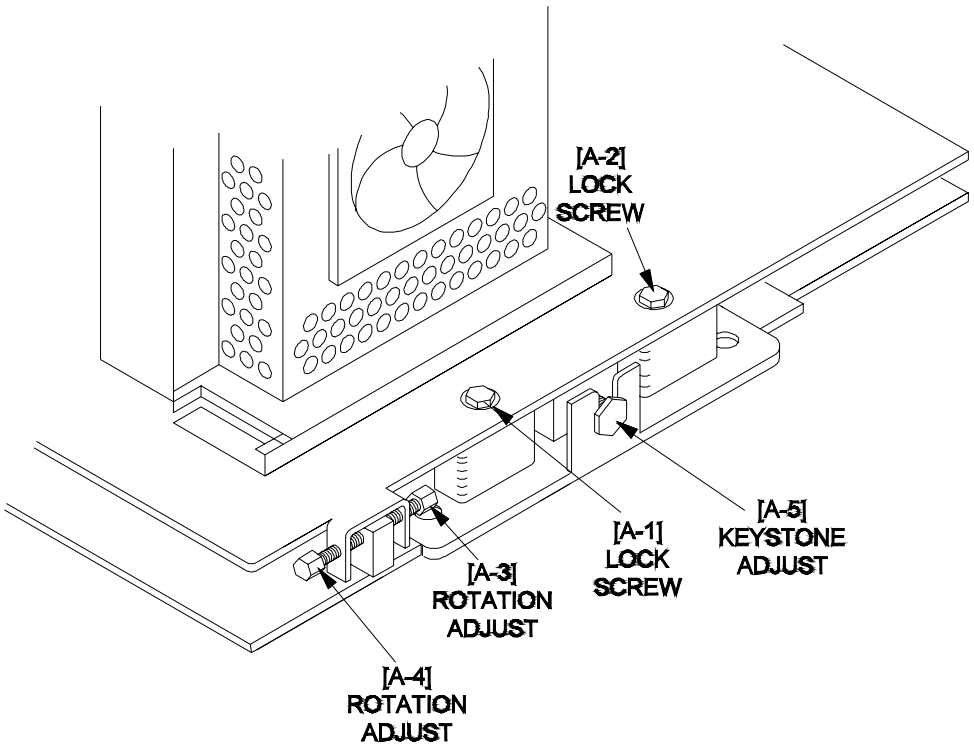
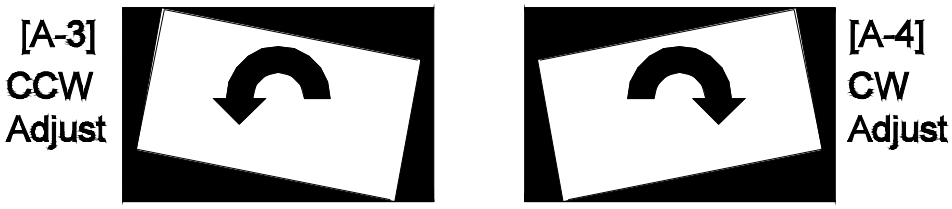


Figure 2: Locking & Adjust Screws

Rotation Adjustment

- Loosen [A-4] and adjust [A-3] to rotate the picture clockwise.
- Loosen [A-3] and adjust [A-4] to rotate the picture counter clockwise.

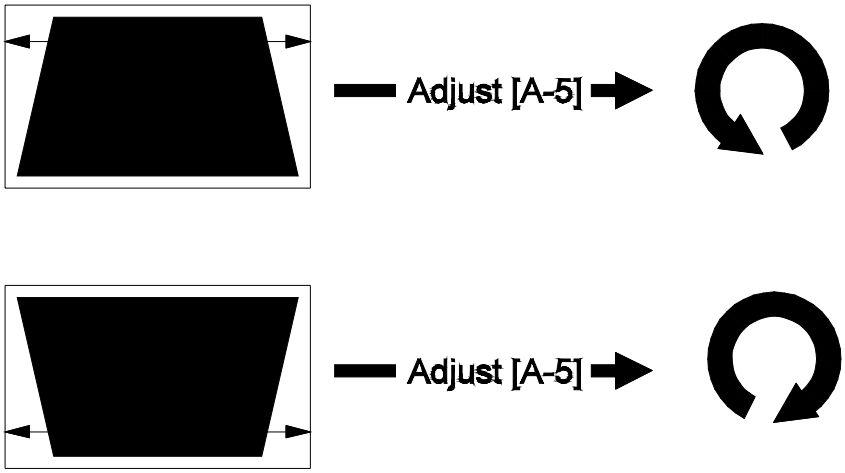


Vertical Keystone Adjustment

Rotate [A-7] to remove any vertical keystone distortion.

- Rotate [A-7] counter clockwise to increase width at the top of the picture.
- Rotate [A-7] clockwise to increase width at the bottom of the picture.

NOTE: Picture vertical position may shift during keystone adjustment



After Making Adjustments:

1) Tighten locking screws [A-3] and [A-4], hand tight only.
2) Tighten locking screw [A-1]. Torque to 29Kg/cm (minimum).
3) Tighten locking screw [A-2] . Torque to 29Kg/cm (minimum).

Electrical Adjustments

[Format Circuit]

Horizont/Vertical Position Adjustment

Purpose: To center the picture on the screen.

Symptom: Picture is off center.

Measuring	
Test Point	----
Ext. Trigger	------
Measuring	------
Input Signal	Internal Test Pattern.
Input Termi	Video

1. Press “MENU-2-4-5-7”, activates the Service Mode..
2. Select the “FMT” function (AUDIO button).
3. Press “FF/FWD”, activates the Overscan Test Pattern
4. Select “Item 1” HPOS (VIDEO button).
5. Use the ADJUST buttons to center the picture horizontally.
6. Press ENTER to save the new setting.
7. Select “Item 2” VPOS (VIDEO button).
8. Use the ADJUST buttons to center the picture vertically.
9. Press ENTER to save the new setting.
10. Press MENU to exit the Service Mode.

Using Lead Free Solder

The above symbol indicates Lead (Pb) Free solder was used during the construction of PWBs. **Only Lead Free solder** should be used when servicing these PWBs.

Solder must be compatible with that used by the manufacturer. Leaded solder can not be used on PWBs manufactured with Pb-free solder. The Mitsubishi standard for service requires the use of Tin-Silver-Copper (Sn-96.5, Ag-3.0, Cu-0.5). It can be obtained through the Parts Department.
Order part number: **PB FREE SOLDER**

Lead Free solder has a higher melting point, and does not "wet" as well as leaded solder. This means it does not adhere as readily to the solder iron tip, and the surface to be soldered. To counteract this, the flux used is more corrosive.

The following cautions must be taken when using Pb Free solder.

- Higher temperatures can cause the PWB to warp, detaching surface mount components.
- Higher temperatures may cause thermal damage to components.
- Higher temperatures can cause plastics, such as connectors, relays, LEDs electrolytic capacitors, etc. to melt or warp.
- Higher temperatures can cause surface oxidation resulting in poor solder spread-ability and wet-ability.
- The flux is more corrosive.
- The time required for a good solder connection may take longer.
- Poor wet-ability can cause solder balls.
- Higher temperatures can cause flux spattering.
- Soldering iron tip life is shortened.
- Dull finish solder joints (not shiny) can appear to be a "cold" solder joint.

In general a tip temperature of 700° F will usually provide good results.

Displays used to indicate Pb-free

PCBs will be marked, indicating the level of Pb-free construction. *Table 1* defines the levels by phase and shows the different symbols that will be displayed on the PCB. Additionally, a PCB constructed using Pb-free solder may be simply marked **LFS**.

When possible, the indication will be placed close to the part number that is screened onto the PCB (not the part label). *Figure 1* is an example of a PCB showing the display and its location.

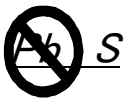
Pb-Free Phase	Definition	Display	Short Display (When the area is too small)
Phase-1	PCB's constructed using Pb-free solder.		
Phase-2	Solder, PCB surface finishing and component lead plating is Pb-free. Components may have internal Pb.		
Phase-3	Solder, PCB surface finishing and components are Pb-free. (100% Pb-free)		

Table 1: Pb-Free Phases and Symbols

Figure 2: Pb-Free display on PWB

CHIP PARTS REPLACEMENT

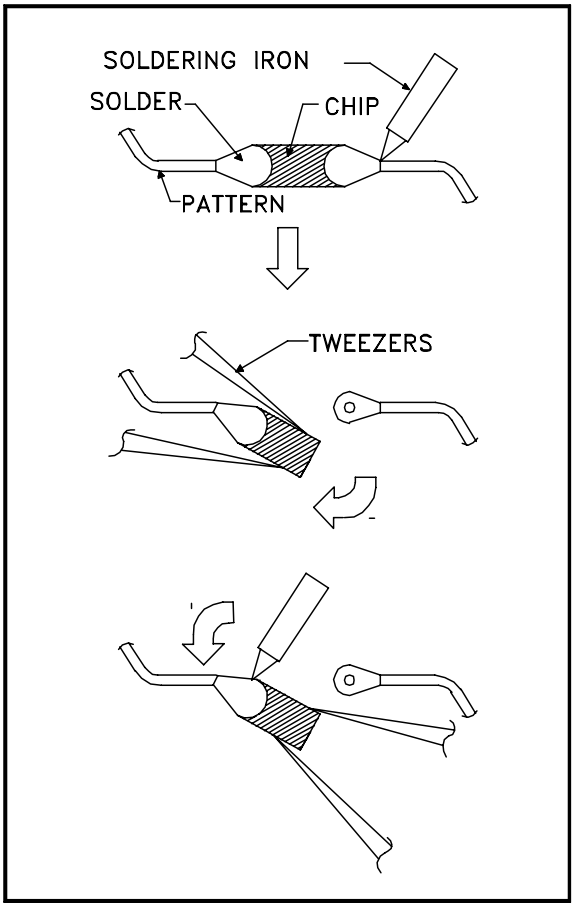
Some resistors, shorting jumpers (0 Ohm resistors), ceramic capacitors, transistors and diodes are chip parts. The following precautions should be taken when replacing these parts.

Cautions:

1. Use a fine tipped, well insulated soldering iron and tweezers.
2. Melt the solder and remove the chip parts carefully so as not to tear the copper foil from the printed circuit board.
3. Discard removed chips; do not reuse them.
4. Do not apply heat for more than 3 (three) seconds to new chip parts.
5. Avoid using a rubbing stroke when soldering.
6. Take care not to scratch, or damage the chip parts when soldering.
7. Supplementary cementing is not required.

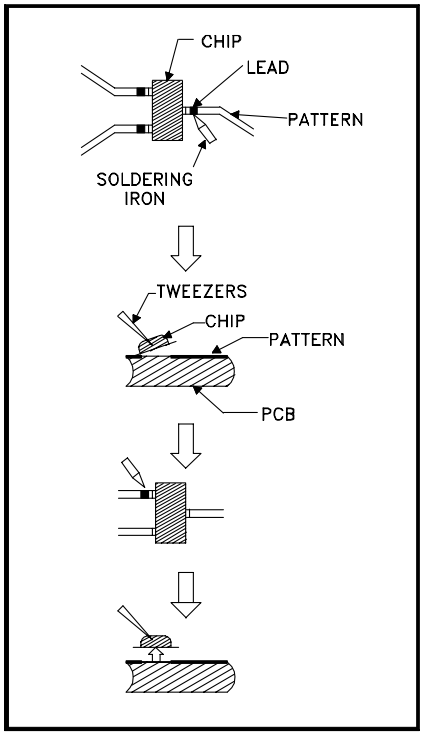
Chip Parts Removal (Resistors, Capacitors, etc.)

1. Grasp the part with tweezers. Melt the solder at both sides alternately, and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.



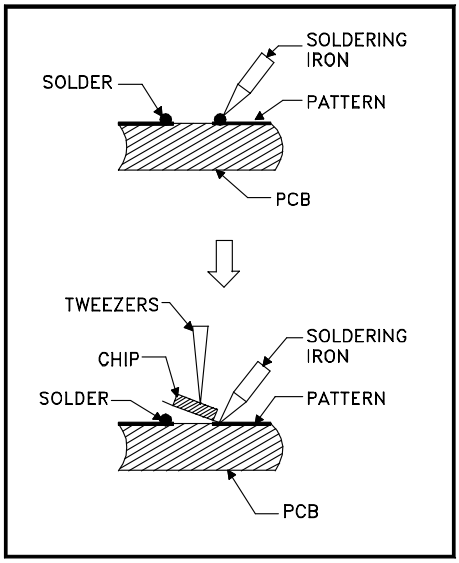
Chip Parts Removal (Transistors)

1. Melt the solder of one lead and lift the side of that lead upward.
2. Simultaneously melt the solder of the other two leads and lift the part from the PCB.



Replacement

1. Presolder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown.



REPLACEMENT PARTS

Parts Ordering
To expedite delivery of replacement parts orders, specify the following:

1. Model Number/Serial Number
2. Part Number and description
3. Quantity

Note: Unless complete information is supplied, delay in processing of orders will result.

Critical and Warranty Parts Designation

Critical Electrical Components are indicated by **Bold Type** in the Parts List, and in the schematic diagrams by shading.

Warranty Return Parts are indicated in the Parts List with an **(*)**.

Parts Tolerance Codes
Refer to the following chart for tolerance characteristics of electrical components.

MARK	B	C	D	F	G	J	K
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
Tolerance %	± 20	± 30	± 10	+ 40 -20	+ 80 -20	+ 100 - 0	+ 30 -10

MARK	M	N	V	X	Z
Tolerance (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

QUICK REFERENCE FOR COMMON PARTS

Major PWB Assemblies

PWB	PART NO	MODELS
PWB-POWER	934C228002	WD-52631
	934C228001	WD-57731 / WD-65731
PWB-TERMINAL	934C223001	WD-52631 / WD-57731 / WD-65731
PWB-SIGNAL	934C224003	WD-52631
	934C224001	WD-57731 / WD-65731
PWB-DM	934C225006	WD-52631
	934C225001	WD-57731 / WD-65731
PWB-FRONT	935D889001	WD-57731 / WD-65731
PWB-FRONT2	935D906001	WD-52631
PWB-SW-LAMP	935D891001	WD-52631 / WD-57731 / WD-65731
PWB-E2P	935D893001	WD-52631 / WD-57731 / WD-65731
PWB-CONT2	935D902001	WD-57731 / WD-65731
PWB-CONT4	935D904001	WD-52631
PWB-PREAMP	935D890001	WD-52631 / WD-57731 / WD-65731

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OPTICAL COMPONENTS

Component	Part No.	Models
OPTICAL ENGINE 52" xHD5	938P059050	WD-52631
OPTICAL ENGINE 57" xHD5	938P059010	WD-57731
OPTICAL ENGINE 65" xHD5	938P059020	WD-65731
BALLAST - LAMP PWR	938P060010	WD-52631 / WD-57731 / WD-65731
LAMP CARTRIDGE	**915P049010**	WD-52631 / WD-57731 / WD-65731

MIRROR & SCREEN PARTS

MODEL	MIRROR	LENTICULAR SCREEN	FRESNEL LENS
WD-52631	767D083020	491P199050	491P202090
WD-57731	767D083030	491P199080	491P202080
WD-65731	767D082050	491P199030	491P202030

MISCELLANEOUS PARTS

CHASSIS	Exhaust Fan (for Lamp)	DMD Fan	Ballast Fan	Remote Control
V33	299P288010	299P312010	299P306010	290P137010

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

INTEGRATED CIRCUITS

Ref #	Part #	Part Name & Description	[#]
IC102	276P325010	IC-C-MOS - MAX4232AKA+T/SOT-23+	
IC1500	276P322020	IC-C-MOS - T314 218T314ZGArrG	
IC1502	271P216010	IC - SC4215ISTRT	
IC1503	271P072040	IC - LD29150DT18R	
IC1504	275P677010	IC-C-MOS - SN74LVC573APWR	
IC2000	276P328010	IC-C-MOS - SiI9023CTU144	
IC2001	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2002	276P299010	IC - CM1213-04MR	
IC2003	276P299010	IC - CM1213-04MR	
IC2004	276P342010	IC-C-MOS - TMDS341PFCR	
IC2005	276P343010	IC-C-MOS - SN74LVC126APWR	
IC2007	276P347010	IC-C-MOS - SN74CBT3125PWR	
IC2101	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2102	276P299010	IC - CM1213-04MR	
IC2103	276P299010	IC - CM1213-04MR	
IC2201	276P299010	IC - CM1213-04MR	
IC2202	276P299010	IC - CM1213-04MR	
IC2203	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2204	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2K01	271P208010	IC - AN15870A	
IC2K04	276P238010	IC-C-MOS - SN74LVC14APWR	
IC2L01	276P238010	IC-C-MOS - SN74LVC14APWR	
IC2M00	275P947020	IC-C-MOS - uPD64083GF-3BAA	
IC2M02	271P240010	IC - EL1881CSZ-T7	
IC3001	271P209010	IC - AN5832SA	
IC3A04	276P146010	IC-C-MOS - CS5340-CZR	
IC3A05	276P326010	IC-C-MOS - CS4351-CZZR	
IC3A06	276P326010	IC-C-MOS - CS4351-CZZR	
IC3E01	271P138010	IC - LV1115	
IC3E02	276P271010	IC-C-MOS - MP7720DS-LF-Z	
IC3E03	276P271010	IC-C-MOS - MP7720DS-LF-Z	
IC3J01	271P210010	IC - MM1699XJBE	
IC7A00	276P244080	IC-C-MOS - M306V7FGFP#U0-V321	
IC7A02	270P706020	IC - MAX823REUK	
IC7A03	275P786010	IC-C-MOS - TC7SA08FU	
IC7A29	271P023010	IC - SN74CBTD1G125DBVR	
IC7E01	276P360010	IC - AD9983KSTZ-80	
IC7E02	270P992010	IC - BA18BC0FP	
IC7G01	276P338010	IC-C-MOS - MB87Q1530PBESE1	
IC7G02	270P879030	IC - SC1566I5M-2.5TR	
IC7GA1	275P982020	IC-C-MOS - MT48LC2M32B2P-7	
IC7GA2	275P982020	IC-C-MOS - MT48LC2M32B2P-7	
IC7GA3	275P982020	IC-C-MOS - MT48LC2M32B2P-7	
IC8001	276P030030	IC-C-MOS - 215H31AGA12H	
IC8002	270P706020	IC - MAX823REUK	
IC8006	276P174030	IC-C-MOS - AT24C64AN-10SU-2.7	bc
IC8008	276P214010	IC-C-MOS - SN74LVC2G125DCUR	
IC80E1	276P174020	IC-C-MOS - AT24C256BN-10SU-1.8	
IC80E2	271P150010	IC - 24LC512T-I/SM	
IC80E3	276P174030	IC-C-MOS - AT24C64AN-10SU-2.7	
IC8101	271P033010	IC - LP2996MRX	
IC8102	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8103	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8104	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8105	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8205	276P042010	IC-C-MOS - MIC2544-1BM	
IC8211	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8212	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8280	276P215010	IC-C-MOS - DS1337U+T&R	
IC8301	275P677010	IC-C-MOS - SN74LVC573APWR	
IC8303	275P677010	IC-C-MOS - SN74LVC573APWR	
IC8304	275P956030	IC-C-MOS - MD5811-D256-V3Q18-P	
IC8305	275P677010	IC-C-MOS - SN74LVC573APWR	
IC8307	276P199010	IC-C-MOS - ST16C654CQ64TR-F	
IC8308	275P677010	IC-C-MOS - SN74LVC573APWR	
IC8312	276P333010	IC-C-MOS - LCMX0256C3TN10C	
IC8401	276P193010	IC-C-MOS - MN864620	
IC8403	275P686010	IC-C-MOS - TSB41AB3PFP	
IC8404	271P155010	IC - MM1661FTRE	
IC8501	276P202020	IC-C-MOS - ICS443M-20LFT	
IC8502	275P124040	IC-C-MOS - SN74LVC245APWR	bc
IC8503	275P677010	IC-C-MOS - SN74LVC573APWR	bc
IC8505	275P677010	IC-C-MOS - SN74LVC573APWR	bc
IC8506	276P065030	IC-C-MOS - CIMAX SP2 PBF	bc
IC8507	275P913010	IC-C-MOS - SN74LVC257APWR	bc
IC8508	275P675010	IC-C-MOS - SN74LV125APWR	bc
IC8511	271P171010	IC - MIC2040-1YMM	bc
IC8512	271P171010	IC - MIC2040-1YMM	bc
IC8513	271P171010	IC - MIC2040-1YMM	bc
IC8A01	276P352010	IC-C-MOS - AD80139KSTZ	
IC8A04	276P217010	IC-C-MOS - SN74LVT245BPWR	
IC8F01	276P336010	IC-C-MOS - SiI7170CMSU	
IC8F03	270P992030	IC - BA33BC0FP-E2	
IC8G02	276P174020	IC-C-MOS - AT24C256BN-10SU-1.8	
IC8G03	276P330030	IC-C-MOS - M30843FHFP#U5-V331	
IC8G07	276P064010	IC-C-MOS - SN74LVC1G125DBV	
IC8G08	276P214010	IC-C-MOS - SN74LVC2G125DCUR	
IC8G10	276P213010	IC-C-MOS - SN74LVC1G17-DCKR	
IC8H01	270P658030	IC - CXA2019AQ/T4	
IC9A10	**267P175010**	**HIC - STR-W6735**	
IC9A20	**271P142010**	**IC - RT9H301C**	
IC9C51	271P072020	IC - LD29150DT33	
IC9C60	271P072030	IC - LD29150DT50	
IC9E00	271P072040	IC - LD29150DT18R	
IC9E01	271P171010	IC - MIC2040-1YMM	
IC9G00	271P141010	IC - TPS40071PWPR	
IC9G23	271P072040	IC - LD29150DT18R	
IC9G24	270P879030	IC - SC1566I5M-2.5TR	
IC9G50	271P141010	IC - TPS40071PWPR	
IC9G70	270P999010	IC - NJM2370R09	
IC9H00	271P215010	IC - MP2355DN-LF-Z	
IC9H01	271P081010	IC - BA00CC0WFP	
IC9H02	271P141010	IC - TPS40071PWPR	
IC9M02	271P072010	IC - LD29150DT25	

TRANSISTORS

CHIP Type Transistors (Listed by Part No.)

Part No.	Description	
261P842030	2SC3052-T112-1G	
261P842080	2SC3052-T112-1E;F	
261P843080	2SA1235-T112-1E;F	bc
261P844010	RT1N436C-T112-1	a
261P859010	Si7804DN-T1-E3	

Conventional Transistors (By Ref #)

Ref #	Part #	Part Name & Description	[#]
Q9A12	261P223010	TR - 2SJ651	

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

DIODES

Ref #	Part #	Part Name & Description	[#]
D2001	262P828010	D-CHIP - MC2838-T112-1	
D2002	262P828010	D-CHIP - MC2838-T112-1	
D2003	262P828010	D-CHIP - MC2838-T112-1	
D2021	262P840090	D-CHIP - MAZ80510H	
D2101	262P828010	D-CHIP - MC2838-T112-1	
D2102	262P828010	D-CHIP - MC2838-T112-1	
D2103	262P828010	D-CHIP - MC2838-T112-1	
D2121	262P840090	D-CHIP - MAZ80510H	
D2202	262P828010	D-CHIP - MC2838-T112-1	
D2203	262P828010	D-CHIP - MC2838-T112-1	
D2204	262P840090	D-CHIP - MAZ80510H	
D2205	262P828010	D-CHIP - MC2838-T112-1	
D2301	264P882010	D-CHIP - HSB123	
D2302	264P882010	D-CHIP - HSB123	
D2303	264P882010	D-CHIP - HSB123	
D2304	262P828020	D-CHIP - MC2836-T112-1	
D2305	262P828010	D-CHIP - MC2838-T112-1	
D2J01	262P163010	D-CHIP - MALS068X0L	
D2J02	262P163010	D-CHIP - MALS068X0L	
D2J03	262P163010	D-CHIP - MALS068X0L	
D2J04	262P163010	D-CHIP - MALS068X0L	
D2L41	262P163010	D-CHIP - MALS068X0L	
D2L43	262P163010	D-CHIP - MALS068X0L	
D2L45	262P163010	D-CHIP - MALS068X0L	
D2L47	262P163010	D-CHIP - MALS068X0L	
D2L49	262P163010	D-CHIP - MALS068X0L	
D2L51	262P163010	D-CHIP - MALS068X0L	
D2L52	262P163010	D-CHIP - MALS068X0L	
D3E01	262P841010	D-CHIP - MAZ80620H	
D3E02	262P087010	D-CHIP - EC21QS04-TE12L	
D3E21	262P841010	D-CHIP - MAZ80620H	
D3E22	262P087010	D-CHIP - EC21QS04-TE12L	
D7A73	262P828010	D-CHIP - MC2838-T112-1	
D7LC1	264P212020	D-LED - LN31GPH	bc
D7LC2	264P584020	DIODE-LE - SML1216W-C,D	bc
D7LC3	264P584020	DIODE-LE - SML1216W-C,D	bc
D7N01	264P212020	D-LED - LN31GPH	a
D7N02	264P584020	DIODE-LE - SML1216W-C,D	a
D7N03	264P584020	DIODE-LE - SML1216W-C,D	a
D8201	264P846010	D-CHIP - MA732	
D8202	264P846010	D-CHIP - MA732	
D8203	264P846010	D-CHIP - MA732	
D8204	264P846010	D-CHIP - MA732	
D8280	262P828010	D-CHIP - MC2838-T112-1	
D8G09	262P828010	D-CHIP - MC2838-T112-1	
D8G15	262P828010	D-CHIP - MC2838-T112-1	
D8G16	262P828020	D-CHIP - MC2836-T112-1	
D8G18	262P828020	D-CHIP - MC2836-T112-1	
D8G20	262P828010	D-CHIP - MC2838-T112-1	
D9A00	262P162010	DIODE - D3SB80	
D9A02	264P045080	DIODE - 1S2076A/1S2471OM	
D9A03	264P775080	DIODE-MTZJ6.2CQLF	a
D9A03	264P776030	DIODE - MTZJ6.8C - LF	bc
D9A04	264P045080	DIODE - 1S2076A/1S2471OM	
D9A05	262P170010	DIODE - SARS01	
D9A06	264P045080	DIODE - 1S2076A/1S2471OM	a
D9A07	262P158010	DIODE - S3V60-5004P.15	
D9A08	262P158010	DIODE - S3V60-5004P.15	
D9A18	264P045080	DIODE - 1S2076A/1S2471OM	
D9A19	264P045080	DIODE - 1S2076A/1S2471OM	
D9A20	264P045080	DIODE - 1S2076A/1S2471OM	
D9A22	264P775080	DIODE-MTZJ6.2CQLF	a
D9A22	264P776030	DIODE - MTZJ6.8C - LF	bc
D9A23	262P085010	DIODE - 11EFS2N-TA2B5	
D9A24	262P085010	DIODE - 11EFS2N-TA2B5	
D9A25	262P085010	DIODE - 11EFS2N-TA2B5	
D9A26	**264P919010**	**DIODE - FCH20A10**	
D9A31	262P084020	DIODE - 31DQ09-FC5	
D9G00	264P846010	D-CHIP - MA732	
D9G02	262P840060	D-CHIP - MAZ80390H	
D9G03	262P828010	D-CHIP - MC2838-T112-1	
D9G04	264P846010	D-CHIP - MA732	
D9G05	262P828010	D-CHIP - MC2838-T112-1	
D9G50	264P846010	D-CHIP - MA732	
D9G52	262P840060	D-CHIP - MAZ80390H	
D9G53	262P828010	D-CHIP - MC2838-T112-1	
D9G54	264P846010	D-CHIP - MA732	
D9H00	262P840060	D-CHIP - MAZ80390H	
D9H01	262P828010	D-CHIP - MC2838-T112-1	
D9H02	262P160010	D-CHIP - EC31QS04-TE12L	
D9H05	262P828010	D-CHIP - MC2838-T112-1	
D9H06	262P828010	D-CHIP - MC2838-T112-1	
D9H07	262P828010	D-CHIP - MC2838-T112-1	
D9H08	262P828010	D-CHIP - MC2838-T112-1	
D9H09	262P842080	D-CHIP - MAZ83000H	
D9H20	264P846010	D-CHIP - MA732	
D9H22	262P843010	D-CHIP - MAZ80560H	
D9H23	264P846010	D-CHIP - MA732	
D9H24	262P828010	D-CHIP - MC2838-T112-1	

COILS

Ref #	Part #	Part Name & Description	[#]
L101	409P923060	EMI-F-CHIP - BLM21B272S	bc
L101	409P923060	EMI-F-CHIP - BLM21B272S	a
L102	409P923060	EMI-F-CHIP - BLM21B272S	bc
L102	409P923060	EMI-F-CHIP - BLM21B272S	a
L103	409P923060	EMI-F-CHIP - BLM21B272S	bc
L103	409P923060	EMI-F-CHIP - BLM21B272S	a
L104	409P865080	EMI-F-CHIP - BLM18PG6	a
L105	409P865080	EMI-F-CHIP - BLM18PG6	bc
L106	409P923060	EMI-F-CHIP - BLM21B272S	bc
L107	409P865020	EMI-F-CHIP - BLM11A601S	
L108	409P865020	EMI-F-CHIP - BLM11A601S	
L1500	409P865070	EMI-F-CHIP - BLM11P300S	
L1502	409P865070	EMI-F-CHIP - BLM11P300S	
L1503	409P865070	EMI-F-CHIP - BLM11P300S	
L1504	409P865070	EMI-F-CHIP - BLM11P300S	
L1505	409P865070	EMI-F-CHIP - BLM11P300S	
L1506	409P865070	EMI-F-CHIP - BLM11P300S	
L1507	409P865070	EMI-F-CHIP - BLM11P300S	
L1508	409P865070	EMI-F-CHIP - BLM11P300S	
L1509	409P777080	EMI-F-CHIP - BLM21P221S	
L1510	409P865070	EMI-F-CHIP - BLM11P300S	
L2018	409P777080	EMI-F-CHIP - BLM21P221S	
L2118	409P777080	EMI-F-CHIP - BLM21P221S	
L2201	409P777080	EMI-F-CHIP - BLM21P221S	
L2215	409P777080	EMI-F-CHIP - BLM21P221S	
L2216	409P777080	EMI-F-CHIP - BLM21P221S	

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]
L2222	409P777080	EMI-F-CHIP - BLM21P221S	
L2235	409P777080	EMI-F-CHIP - BLM21P221S	
L2237	409P777080	EMI-F-CHIP - BLM21P221S	
L2238	409P777080	EMI-F-CHIP - BLM21P221S	
L2255	409P777080	EMI-F-CHIP - BLM21P221S	
L2287	409P777080	EMI-F-CHIP - BLM21P221S	
L2289	409P777080	EMI-F-CHIP - BLM21P221S	
L2294	409P777080	EMI-F-CHIP - BLM21P221S	
L2295	409P865020	EMI-F-CHIP - BLM11A601S	
L2296	409P865020	EMI-F-CHIP - BLM11A601S	
L2297	409P777080	EMI-F-CHIP - BLM21P221S	
L2298	409P777080	EMI-F-CHIP - BLM21P221S	
L2329	409P865040	EMI-F-CHIP - BLM11B050SA	
L2330	409P865040	EMI-F-CHIP - BLM11B050SA	
L2331	409P865040	EMI-F-CHIP - BLM11B050SA	
L2332	409P865060	EMI-F-CHIP - BLM11B141S	
L2333	409P865060	EMI-F-CHIP - BLM11B141S	
L2340	409P777080	EMI-F-CHIP - BLM21P221S	
L2K00	325C420070	COIL-CHIP - 10MH-K	
L2K03	409P777080	EMI-F-CHIP - BLM21P221S	
L2K16	325C421020	COIL-CHIP - 68MH-K LOW-R	
L2K49	325C421020	COIL-CHIP - 68MH-K LOW-R	
L2K77	325C420070	COIL-CHIP - 10MH-K	
L2KC0	409P777080	EMI-F-CHIP - BLM21P221S	
L2KD0	325C411030	COIL-CHIP - 10MH-J	
L2KD1	321C114010	COIL-RF - 2200MH-J	
L2KE0	325C411030	COIL-CHIP - 10MH-J	
L2KF0	325C411030	COIL-CHIP - 10MH-J	
L2KF1	321C114010	COIL-RF - 2200MH-J	
L2KG0	325C411030	COIL-CHIP - 10MH-J	
L2L11	409P923060	EMI-F-CHIP - BLM21B272S	
L2L12	409P923060	EMI-F-CHIP - BLM21B272S	
L2L13	409P923060	EMI-F-CHIP - BLM21B272S	
L2L14	409P923060	EMI-F-CHIP - BLM21B272S	
L2L15	409P923060	EMI-F-CHIP - BLM21B272S	
L2L17	409P923060	EMI-F-CHIP - BLM21B272S	
L2L18	409P923060	EMI-F-CHIP - BLM21B272S	
L2L19	409P923060	EMI-F-CHIP - BLM21B272S	
L2L20	409P923060	EMI-F-CHIP - BLM21B272S	
L2L22	409P923060	EMI-F-CHIP - BLM21B272S	
L2L23	409P923060	EMI-F-CHIP - BLM21B272S	
L2L24	409P923060	EMI-F-CHIP - BLM21B272S	
L2L41	409P923060	EMI-F-CHIP - BLM21B272S	
L2L43	409P923060	EMI-F-CHIP - BLM21B272S	
L2L45	409P923060	EMI-F-CHIP - BLM21B272S	
L2L47	409P923060	EMI-F-CHIP - BLM21B272S	
L2L49	409P923060	EMI-F-CHIP - BLM21B272S	
L2L51	409P923060	EMI-F-CHIP - BLM21B272S	
L2L52	409P923060	EMI-F-CHIP - BLM21B272S	
L2L61	325C411030	COIL-CHIP - 10MH-J	
L2L72	409P865020	EMI-F-CHIP - BLM11A601S	
L2L80	409P865020	EMI-F-CHIP - BLM11A601S	
L2M21	409P777080	EMI-F-CHIP - BLM21P221S	
L2M35	325C420080	COIL-CHIP - 15MH-K LOW-R	
L2M38	409P777080	EMI-F-CHIP - BLM21P221S	
L2M39	409P777080	EMI-F-CHIP - BLM21P221S	
L2M40	409P777080	EMI-F-CHIP - BLM21P221S	
L2M41	325C411080	COIL-CHIP - 27MH-J	
L2M45	409P777080	EMI-F-CHIP - BLM21P221S	
L2M46	409P777080	EMI-F-CHIP - BLM21P221S	

Ref #	Part #	Part Name & Description	[#]
L2M50	325C411000	COIL-CHIP - 5.6MH-J	
L2M53	409P777080	EMI-F-CHIP - BLM21P221S	
L2M70	409P777080	EMI-F-CHIP - BLM21P221S	
L2M71	325C411080	COIL-CHIP - 27MH-J	
L2M81	409P777080	EMI-F-CHIP - BLM21P221S	
L3001	409P865020	EMI-F-CHIP - BLM11A601S	
L3A01	409P865080	EMI-F-CHIP - BLM18PG6	
L3A07	409P865020	EMI-F-CHIP - BLM11A601S	
L3A08	409P865020	EMI-F-CHIP - BLM11A601S	
L3A09	409P865020	EMI-F-CHIP - BLM11A601S	
L3A10	409P865020	EMI-F-CHIP - BLM11A601S	
L3A11	409P865020	EMI-F-CHIP - BLM11A601S	
L3A12	409P865020	EMI-F-CHIP - BLM11A601S	
L3A14	409P865020	EMI-F-CHIP - BLM11A601S	
L3A16	409P865020	EMI-F-CHIP - BLM11A601S	
L3E01	409P865020	EMI-F-CHIP - BLM11A601S	
L3E10	409P865020	EMI-F-CHIP - BLM11A601S	
L3E12	409P777080	EMI-F-CHIP - BLM21P221S	
L3E13	351P283010	COIL-CHOKE-CHIP - SLF12575T-100M5R4-PF	
L3E22	409P777080	EMI-F-CHIP - BLM21P221S	
L3E23	351P283010	COIL-CHOKE-CHIP - SLF12575T-100M5R4-PF	
L3J36	409P777080	EMI-F-CHIP - BLM21P221S	
L7A16	409P777050	EMI-F-CHIP - BLM21B201S	
L7A73	409P865060	EMI-F-CHIP - BLM11B141S	
L7A89	409P777050	EMI-F-CHIP - BLM21B201S	
L7A99	409P777050	EMI-F-CHIP - BLM21B201S	
L7E01	409P777080	EMI-F-CHIP - BLM21P221S	
L7E02	409P865090	EMI-F-CHIP - BLM11A121S	
L7E04	409P777080	EMI-F-CHIP - BLM21P221S	
L7E07	409P777080	EMI-F-CHIP - BLM21P221S	
L7E08	325C420070	COIL-CHIP - 10MH-K	
L7G01	409P777080	EMI-F-CHIP - BLM21P221S	
L7G02	409P777080	EMI-F-CHIP - BLM21P221S	
L7G03	409P777080	EMI-F-CHIP - BLM21P221S	
L7G04	409P777080	EMI-F-CHIP - BLM21P221S	
L7G05	409P777080	EMI-F-CHIP - BLM21P221S	
L7G06	409P777080	EMI-F-CHIP - BLM21P221S	
L7GA1	409P865080	EMI-F-CHIP - BLM18PG6	
L7GA2	409P865080	EMI-F-CHIP - BLM18PG6	
L7GA3	409P865080	EMI-F-CHIP - BLM18PG6	
L7K01	409P777080	EMI-F-CHIP - BLM21P221S	
L7T11	409P865060	EMI-F-CHIP - BLM11B141S	
L7T12	409P865060	EMI-F-CHIP - BLM11B141S	
L7T13	409P865060	EMI-F-CHIP - BLM11B141S	
L7T14	409P865060	EMI-F-CHIP - BLM11B141S	
L8001	409P865080	EMI-F-CHIP - BLM18PG6	
L8002	409P865080	EMI-F-CHIP - BLM18PG6	
L8003	409P865080	EMI-F-CHIP - BLM18PG6	
L8004	409P865080	EMI-F-CHIP - BLM18PG6	
L8005	409P865080	EMI-F-CHIP - BLM18PG6	
L8006	409P865080	EMI-F-CHIP - BLM18PG6	
L8007	409P865080	EMI-F-CHIP - BLM18PG6	
L8008	409P865080	EMI-F-CHIP - BLM18PG6	
L8009	409P777080	EMI-F-CHIP - BLM21P221S	
L8011	409P865080	EMI-F-CHIP - BLM18PG6	
L8013	409P865080	EMI-F-CHIP - BLM18PG6	
L8204	409P777080	EMI-F-CHIP - BLM21P221S	
L8205	351P265010	COIL-CHOKE-CHIP - ACM2012	
L8206	409P777080	EMI-F-CHIP - BLM21P221S	
L8280	409P865080	EMI-F-CHIP - BLM18PG6	

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]
L8306	409P865080	EMI-F-CHIP - BLM18PG6	
L8307	409P865080	EMI-F-CHIP - BLM18PG6	
L8308	409P865080	EMI-F-CHIP - BLM18PG6	
L8309	409P865080	EMI-F-CHIP - BLM18PG6	
L8310	409P865080	EMI-F-CHIP - BLM18PG6	
L8313	409P865080	EMI-F-CHIP - BLM18PG6	
L8314	409P865080	EMI-F-CHIP - BLM18PG6	
L8318	409P865080	EMI-F-CHIP - BLM18PG6	
L8320	409P865080	EMI-F-CHIP - BLM18PG6	
L83B3	325C501010	COIL-CHIP - ALQM21NNR47K10	
L8401	351P265020	COIL-CHIP - ACM2012-201-2P	
L8402	351P265020	COIL-CHIP - ACM2012-201-2P	
L8403	409P777080	EMI-F-CHIP - BLM21P221S	
L8404	409P777080	EMI-F-CHIP - BLM21P221S	
L8413	351P265020	COIL-CHIP - ACM2012-201-2P	
L8414	351P265020	COIL-CHIP - ACM2012-201-2P	
L8415	351P265020	COIL-CHIP - ACM2012-201-2P	
L8416	351P265020	COIL-CHIP - ACM2012-201-2P	
L8501	409P865080	EMI-F-CHIP - BLM18PG6	
L8502	409P777080	EMI-F-CHIP - BLM21P221S	bc
L8503	409P865080	EMI-F-CHIP - BLM18PG6	bc
L8504	409P865090	EMI-F-CHIP - BLM11A121S	
L8505	409P865080	EMI-F-CHIP - BLM18PG6	bc
L8507	409P865080	EMI-F-CHIP - BLM18PG6	bc
L8508	409P865080	EMI-F-CHIP - BLM18PG6	bc
L8509	409P865080	EMI-F-CHIP - BLM18PG6	bc
L8510	409P865090	EMI-F-CHIP - BLM11A121S	bc
L8511	409P865090	EMI-F-CHIP - BLM11A121S	
L8512	409P865090	EMI-F-CHIP - BLM11A121S	
L8A01	409P777080	EMI-F-CHIP - BLM21P221S	bc
L8A01	409P777080	EMI-F-CHIP - BLM21P221S	a
L8A02	325C420070	COIL-CHIP - 10MH-K	
L8A03	409P777080	EMI-F-CHIP - BLM21P221S	bc
L8A03	409P777080	EMI-F-CHIP - BLM21P221S	a
L8A04	409P777080	EMI-F-CHIP - BLM21P221S	
L8A05	409P777080	EMI-F-CHIP - BLM21P221S	bc
L8A05	409P777080	EMI-F-CHIP - BLM21P221S	a
L8A06	409P777080	EMI-F-CHIP - BLM21P221S	bc
L8A06	409P777080	EMI-F-CHIP - BLM21P221S	a
L8F01	409P777080	EMI-F-CHIP - BLM21P221S	
L8F02	409P777080	EMI-F-CHIP - BLM21P221S	
L8F03	409P777080	EMI-F-CHIP - BLM21P221S	
L8F04	409P777080	EMI-F-CHIP - BLM21P221S	
L8F06	409P865060	EMI-F-CHIP - BLM11B141S	
L8F07	409P865060	EMI-F-CHIP - BLM11B141S	
L8F08	409P865060	EMI-F-CHIP - BLM11B141S	
L8F09	409P865060	EMI-F-CHIP - BLM11B141S	
L8F10	409P865060	EMI-F-CHIP - BLM11B141S	
L8F11	409P865060	EMI-F-CHIP - BLM11B141S	
L8F12	409P865060	EMI-F-CHIP - BLM11B141S	
L8F13	409P865060	EMI-F-CHIP - BLM11B141S	
L8F14	409P865060	EMI-F-CHIP - BLM11B141S	
L8F15	409P865060	EMI-F-CHIP - BLM11B141S	
L8G01	409P865060	EMI-F-CHIP - BLM11B141S	
L8G02	409P865060	EMI-F-CHIP - BLM11B141S	
L8G10	409P865060	EMI-F-CHIP - BLM11B141S	
L8G11	409P865060	EMI-F-CHIP - BLM11B141S	
L8G12	409P865060	EMI-F-CHIP - BLM11B141S	
L8G13	409P865060	EMI-F-CHIP - BLM11B141S	
L8G14	409P865060	EMI-F-CHIP - BLM11B141S	
L8G35	409P777080	EMI-F-CHIP - BLM21P221S	
L8G38	409P777080	EMI-F-CHIP - BLM21P221S	
L8H03	409P777080	EMI-F-CHIP - BLM21P221S	
L8H25	409P777080	EMI-F-CHIP - BLM21P221S	
L9A20	321C140060	COIL-RF - 2.7MH-M	
L9A21	321C140060	COIL-RF - 2.7MH-M	
L9A34	321C141070	COIL-RF - 22MH-K	
L9A35	321C141070	COIL-RF - 22MH-K	
L9C51	409P777080	EMI-F-CHIP - BLM21P221S	
L9D01	**351P306020**	**LINE-FILTER - TF3020V-A602Y5R0-01**	
L9D02	**351P266020**	**LINE-FILTER - ELF22V025A**	
L9D03	**351P286010**	**LINE-FILTER - HF2836-353Y1R0-T01**	
L9E00	409P777080	EMI-F-CHIP - BLM21P221S	
L9G00	321C141010	COIL-RF - 6.8MH-M	
L9G01	351P277020	COIL-CHOKE-CHIP - GSRH127-4R7N	
L9G02	321C141010	COIL-RF - 6.8MH-M	
L9G03	321C141010	COIL-RF - 6.8MH-M	
L9G50	321C141010	COIL-RF - 6.8MH-M	
L9G51	351P277030	COIL-CHOKE-CHIP - GSRH127-7R6M	
L9G52	321C140060	COIL-RF - 2.7MH-M	
L9G53	321C140060	COIL-RF - 2.7MH-M	
L9G70	409P777080	EMI-F-CHIP - BLM21P221S	
L9H00	321C141010	COIL-RF - 6.8MH-M	
L9H01	351P297020	COIL-CHOKE-CHIP - GSRH104R-100M	
L9H02	321C140060	COIL-RF - 2.7MH-M	
L9H03	351P277030	COIL-CHOKE-CHIP - GSRH127-7R6M	
L9H05	321C141010	COIL-RF - 6.8MH-M	
L9H06	321C141010	COIL-RF - 6.8MH-M	
L9H07	321C141010	COIL-RF - 6.8MH-M	
L9H09	321C141070	COIL-RF - 22MH-K	
LC8709	409P945010	EMI-F-CHIP - NFL21SP506X13CD	
LC8710	409P945010	EMI-F-CHIP - NFL21SP506X13CD	
LC8713	409P944010	EMI-F-CHIP - NFL21SP107X1	
T2001	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2002	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2003	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2004	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2101	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2102	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2103	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2104	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2201	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2202	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2203	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2204	409P961010	CHIP-FILTER - ACM2012D-9002P	
T8F01	409P961010	CHIP-FILTER - ACM2012D-9002P	
T8F02	409P961010	CHIP-FILTER - ACM2012D-9002P	
T8F03	409P961010	CHIP-FILTER - ACM2012D-9002P	
T8F04	409P961010	CHIP-FILTER - ACM2012D-9002P	

TRANSFORMERS

T9A10	350P841010	TRAN-PWR - SRW39LECU11V116

VARIABLE RESISTORS

RV9D00	**265P100020**	**VAR - ERZV10D271CS**
RV9D01	**265P100020**	**VAR - ERZV10D271CS**

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]

RESISTORS

CHIP Type Resistors (Listed by Value)

Part No.	Value	Part No.	Value
103P509050	1/16W 0OHM	103P493010	1/16W 1.8K-F
103P409050	1/8W 0OHM	103P502080	1/16W 1.8K-J
103P408040	1/10W 2.2-J	103P493020	1/16W 2K-F
103P508040	1/16W 2.2-J	103P493030	1/16W 2.2K-F
103P791080	1/16W 5.1-F	103P502090	1/16W 2.2K-J
103P500010	1/16W 10-J	103P493050	1/16W 2.7K-F
103P990010	1/16W 10-JX4	103P503000	1/16W 2.7K-J
103P480010	1/4W 10-J	103P493060	1/16W 3K-F
103P400050	1/10W 22-J	103P493070	1/16W 3.3K-F
103P500050	1/16W 22-J	103P503010	1/16W 3.3K-J
103P990050	1/16W 22-JX4	103P493080	1/16W 3.6K-F
103P500060	1/16W 27-J	103P493090	1/16W 3.9K-F
103P500070	1/16W 33-J	103P503020	1/16W 3.9K-J
103P990070	1/16W 33-JX4	103P494000	1/16W 4.3K-F
103P793080	1/16W 36F	103P494010	1/16W 4.7K-F
103P794010	1/16W 47-F	103P503030	1/16W 4.7K-J
103P500090	1/16W 47-J	103P494020	1/16W 5.1K-F
103P990090	1/16W 47-JX4	103P494030	1/16W 5.6K-F
103P844030	1/16W 56-D	103P503040	1/16W 5.6K-J
103P501000	1/16W 56-J	103P814040	1/16W 6.2K-D
103P991010	1/16W 56-JX4	103P494040	1/16W 6.2K-F
103P501010	1/16W 68-J	103P494050	1/16W 6.8K-F
103P794060	1/16W 75-F	103P503050	1/16W 6.8K-J
103P509090	1/16W 75-J	103P503060	1/16W 8.2K-J
103P489090	1/4W 75-J	103P494090	1/16W 10K-F
103P501020	1/16W 82-J	103P403070	1/8W 10K-J
103P991030	1/16W 82-JX4	103P503070	1/16W 10K-J
103P401030	1/10W 100-J	103P994010	1/16W 10K-JX4
103P501030	1/16W 100-J	103P495010	1/16W 12K-F
103P490010	1/16W 100F	103P503080	1/16W 12K-J
103P501040	1/16W 120-J	103P495020	1/16W 13K-F
103P401050	1/10W 150-J	103P495030	1/16W 15K-F
103P810050	1/16W 150-D	103P503090	1/16W 15K-J
103P490050	1/16W 150-F	103P495050	1/16W 18K-F
103P490070	1/16W 180-F	103P504000	1/16W 18K-J
103P401070	1/10W 220-J	103P404000	1/8W 18K-J
103P490090	1/16W 220-F	103P495070	1/16W 22K-F
103P501070	1/16W 220-J	103P504010	1/16W 22K-J
103P481070	1/4W 220-J	103P504020	1/16W 27K-J
103P491000	1/16W 240-F	103P496010	1/16W 33K-F
103P491010	1/16W 270-F	103P504030	1/16W 33K-J
103P491020	1/16W 300-F	103P504050	1/16W 47K-J
103P491030	1/16W 330-F	103P496070	1/16W 56K-F
103P501090	1/16W 330-J	103P504060	1/16W 56K-J
103P491040	1/16W 360-F	103P496090	1/16W 68K-F
103P491050	1/16W 390-F	103P497000	1/16W 68K-F
103P502000	1/16W 390-J	103P504070	1/16W 68K-J
103P491070	1/16W 470-F	103P497010	1/16W 82K-F
103P502010	1/16W 470-J	103P504080	1/16W 82K-J
103P502020	1/16W 560-J	103P497030	1/16W 100K-F
103P492010	1/16W 680-F	103P504090	1/16W 100K-J
103P502030	1/16W 680-J	103P505000	1/16W 120K-J
103P502040	1/16W 820-J	103P497080	1/16W 160K-F
103P492050	1/16W 1K-F	103P505020	1/16W 180K-J
103P502050	1/16W 1K-J	103P505050	1/16W 330K-J
103P492070	1/16W 1.2K-F	103P505090	1/16W 680K-J
103P502060	1/16W 1.2K-J	103P506000	1/16W 820K-J
103P492090	1/16W 1.5K-F	103P506010	1/16W 1M-J

Ref #	Part #	Part Name & Description	[#]

RESISTORS

Conventional Resistors (By Ref #)

Ref #	Part #	Part Name & Description	[#]
R1510	103C398000	R-METAL-P - 3W 1-K	
R9A01	109P179010	R-CEMENT-PLATE - 6.8-J	
R9A02	109P179010	R-CEMENT-PLATE - 6.8-J	
R9A03	**109C010010**	**R-COMP - 1/2W 1M-K**	
R9A05	**109C010010**	**R-COMP - 1/2W 1M-K**	
R9A06	**109C010010**	**R-COMP - 1/2W 1M-K**	
R9A09	103P145030	R-CARBON - 1/2W 220K-J	
R9A11	103P145030	R-CARBON - 1/2W 220K-J	
R9A17	103P145020	R-CARBON - 1/2W 180K-J	
R9A19	103P144070	R-CARBON - 1/2W 68K-J	bc
R9A19	103P144070	R-CARBON - 1/2W 68K-J	a
R9A20	103P144070	R-CARBON - 1/2W 68K-J	bc
R9A20	103P144070	R-CARBON - 1/2W 68K-J	a
R9A21	103C187030	R-METAL - 2W 0.27-J	
R9A22	103C187030	R-METAL - 2W 0.27-J	
R9A25	103P142050	R-CARBON - 1/2W 1K-J	
R9A30	109D151090	R-CARBON - 1/4W 33-J	
R9A42	103P145030	R-CARBON - 1/2W 220K-J	
R9A43	103P145030	R-CARBON - 1/2W 220K-J	
R9A77	103C392010	R-METAL-P - 3W 470-J	
R9A78	103C392010	R-METAL-P - 3W 470-J	
R9A82	103C390090	R-METAL-P - 3W 47-J	
R9A83	103P144070	R-CARBON - 1/2W 68K-J	
R9H20	103C398070	R-METAL-P - 3W 3.9-K	

CAPACITORS

CHIP Type Capacitors (Listed by Value)

Part No.	Value	Part No.	Value
154P340060	CK50V 5P-C	141P144020	F25V 0.1M-Z
154P340070	CH50V 6P-C	141P134090	F50V 0.1M-Z
154P340090	CH50V 8P-C	141P135080	F50V/25V 0.1M-Z
154P341010	CH50V 10P-C	141P146040	B10V 0.22M-K
154P341030	CH50V 12P-J	141P138080	B25V 0.33M-K
154P341050	CH50V 15P-J	141P144040	F25V/16V 0.33M-Z
154P341070	CH50V 18P-J	141P146080	B10V 0.47M-K
154P341090	CH50V 22P-J	141P139090	B16V 0.47M-K
154P342030	CH50V 33P-J	141P133000	B50V 0.47M-K
154P342070	CH50V 47P-J	141P144050	F16V 0.47M-Z
154P342090	CH50V 56P-J	141P135020	F25V 0.47M-Z
154P345090	CH25V 1000P-J	141P147020	B10V/6.3V 1M-K
154P343050	CH50V 100P-J	141P134070	B16V 1M-K
154P353060	SL50V 100P-J	141P148000	B25V 1M-K
154P343070	CH50V 120P-J	189P245010	25V 1M
154P344030	CH50V 220P-J	141P135070	F16V 1M-Z
141P140010	B50V 220P-K	141P144060	F25V 1M-Z
154P344050	CH50V 270P-J	181P802040	16V 2.2M-M
154P344070	CH50V 330P-J	181P806020	50V 2.2M-M
141P140040	B50V 390P-K CK1608	141P147040	B6.3V 2.2M-K
154P345010	CH50V 470P-J	181P806030	50V 3.3M-M
141P140050	B50V 470P-K	141P133010	B10V 3.3M-M
154P345030	CH25V 560P-J	181P808070	16V 4.7M-M
141P140060	B50V 560P-K	181P824090	35V 4.7M-M 105C
154P345050	CH25V 680P-J	141P136080	B25V 4.7M-K

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]
141P140070	B50V 680P-K		
154P345070	CH25V 820P-J		
141P140090	B50V 1000P-K		
141P141030	B50V 2200P-K		
141P141040	B50V 2700P-K		
141P141070	B50V 4700P-K		
141P141080	B50V 5600P-K		
141P142000	B50V 8200P-K		
141P142010	B50V 0.01M-K		
141P133080	B50V 0.01M-Z		
141P143080	F50V 0.01M-Z		
141P142050	B25V 0.022M-K		
141P142070	B25V 0.033M-K		
141P142090	B25V 0.047M-K		
141P144010	F50V 0.047M-Z		
141P143010	B25V 0.068M-K		
141P143020	B16V 0.082M-K		
141P143030	B16V 0.1M-K		
141P139030	B25V 0.1M-K		
141P147060	B6.3V 4.7M-K		
181P802030	16V 10M-M		
181P825000	35V 10M-M 105C		
181P822030	16V 10M-M 105C		
181P826050	50V 10M-M 105C		
189P243010	6.3V 10M		
189P243050	16V 10M		
189P243020	25V 10M		
181P820010	6.3V 22M-M 105C		
189P243040	25V 22M		
181P802060	16V 47M-M		
181P800030	6.3V 47M-M		
181P822060	16V 47M-M 105C		
181P820030	6.3V 47M-M 105C		
181P802070	16V 100M-M		
181P800040	6.3V 100M-M		
181P822070	16V 100M-M 105C		
181P800060	6.3V 220M-M		
181P828010	4V 220M-M 105C		

CAPACITORS AND TRIMMERS

Conventional Capacitors (By Ref #)

Ref #	Part #	Part Name & Description	[#]
C3E45	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E48	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E65	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E68	181P735030	C-ELEC - 25V 1000M-M 105C	
C7K01	181P352030	C-ELEC - 16V 47M-M	
C8281	189P197020	C-ELE-DBL-LA - FM0H473Z/EECS5R5T473Z	
C9A00	189P185090	C-CER - AC250V E2200P-M	
C9A01	189P185090	C-CER - AC250V E2200P-M	
C9A02	185D122040	C-ELEC - H200V 820M-M	
C9A03	185D122040	C-ELEC - H200V 820M-M	
C9A05	189P185090	C-CER - AC250V E2200P-M	
C9A06	189P185090	C-CER - AC250V E2200P-M	
C9A08	189P185090	C-CER - AC250V E2200P-M	
C9A09	189P185090	C-CER - AC250V E2200P-M	
C9A10	**189P185090**	**C-CER - AC250V E2200P-M**	
C9A11	189P185090	C-CER - AC250V E2200P-M	
C9A13	**189P152080**	**C-M-POLY - AC125/250V 0.015M-M**	
C9A14	**189P152080**	**C-M-POLY - AC125/250V 0.015M-M**	
C9A15	**189P185070**	**C-CER - AC250V E1000P-M**	
C9A16	**189P185070**	**C-CER - AC250V E1000P-M**	
C9A18	185D122040	C-ELEC - H200V 820M-M	
C9A21	**181P185060**	**C-ELEC - 50V 10M-M 105C**	
C9A25	172P138020	C-POLY - 50V 5600P-J	
C9A29	185D122040	C-ELEC - H200V 820M-M	
C9A30	154P400050	C-CER - B1KV 1000P-K	
C9A31	142P010090	C-CER - B500V 470P-K	
C9A33	181P733080	C-ELEC - 16V 1000M-H 105C LOWR	
C9A34	181P733080	C-ELEC - 16V 1000M-H 105C LOWR	
C9A35	181P733080	C-ELEC - 16V 1000M-H 105C LOWR	
C9A36	181P733080	C-ELEC - 16V 1000M-H 105C LOWR	
C9A37	181P733080	C-ELEC - 16V 1000M-H 105C LOWR	
C9A39	181P184070	C-ELEC - 35V 2200M-M	
C9A43	172P137030	C-POLYESTER:50V 1000P-J	a
C9A43	172P166030	C-TF - 50V 0.1M-J	bc
C9A46	142P010090	C-CER - B500V 470P-K	
C9A47	181P351070	C-ELEC - 10V 470M-M	
C9A48	181P355010	C-ELEC - 50V 1M-M	
C9A54	181P733060	C-ELEC - 16V 470M-H 105C LOWR	
C9A70	154P400060	C-CER - B1KV 1500P-K	
C9A71	154P400060	C-CER - B1KV 1500P-K	
C9A91	172P082080	C-PLSTIC-PP - 630V 5600P-J	
C9D01	**189P153060**	**C-M-POLY-AC - AC125/250V 0.22M-M**	
C9D03	**189P153060**	**C-M-POLY-AC - AC125/250V 0.22M-M**	
C9D07	**189P153060**	**C-M-POLY-AC - AC125/250V 0.22M-M**	
C9G18	181P732000	C-ELEC - 10V 680M-M 105C	
C9G62	181P732000	C-ELEC - 10V 680M-M 105C	
C9G63	181P732000	C-ELEC - 10V 680M-M 105C	
C9G86	181P732000	C-ELEC - 10V 680M-M 105C	
C9H08	181P352070	C-ELEC - 16V 470M-M	
C9H11	181P732000	C-ELEC - 10V 680M-M 105C	
CF8H01	299P128010	OSC-CERAMIC - CSB500F2	

SWITCHES

RE100	305P706010	SWITCH-RF TYPE BABY	a
S7LA1	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA2	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA3	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA4	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA5	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA6	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA7	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA8	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LA9	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7LC1	432P109010	SW-KEY BOARD - KSHS611BT	bc
S7N01	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N02	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N03	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N04	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N05	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N06	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N07	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N08	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N09	432P109010	SW-KEY BOARD - KSHS611BT	a
S7N10	432P109010	SW-KEY BOARD - KSHS611BT	a

MISCELLANEOUS

S/M WD52631	SERVICE MANUAL	
S/M WD57731	SERVICE MANUAL	
S/M WD65731	SERVICE MANUAL	
246C351070	AC POWER CORD	
246C561010	CABLE-DVI	
299P288010	FAN-EXHAUS (for Lamp) - 9AH0912M4D04	
299P306010	FAN-BALLAST - BM6025-04W-B59	
299P312010	FAN - DMD	
305P705020	SWITCH-RF-TYPE 5	bc
411D044020	CORE-FERRITE - ZCAT2032-0930	
411P029010	CORE-FERRITE - ZCAT3513S	
434P004010	LAMP SWITCH	
480P083010	SPEAKER - 10W	
572C013010	SPRING-DOOR-FRONT	bc
593B215010	HOLDER-MIRROR	a
593B227010	HOLDER-MIRROR	b
593B227020	HOLDER-MIRROR	c
620D204010	TAPE-MIRROR	

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]
	620D204020	TAPE-MIRROR (8mm)	
	622C454010	COVER-LENS-FOAM	
	622C474090	SPACER-GRILLE	b
	622D484010	HOLDER-LED	
	642C431010	CATCH-GRILL-STRIKERS	
	642C432010	STRIKER - SPEAKER GRILL	
	669D735010	ENGINE LOCKING SCREW	
	674D142010	LOCKNUT-NYLON INSERT	
	683D169010	ENGINE LOCKING -SPRING	
	704B225010	BUTTON-POWER	bc
	704B226010	BUTTONS-FRONT	a
	750A573010	BOX-MIRROR	b
	750A574010	BOX-MIRROR	c
	750A579010	BOX-MIRROR	a
	760A019010	INLAY TERMINAL	bc
	760A019040	INLAY TERMINAL	a
	760C789010	INLAY-FRONT CONSOLE	bc
	761A326010	BASE-COMMON	bc
	761A333010	GRILL-SPEAKER	b
	761A334010	GRILL-SPEAKER	c
	761A337010	COVER-BACK	
	761A340020	GRILL-SPEAKER	a
	761A347010	BASE-COMMON	a
	761B453010	COVER - LAMP	
	761B455010	COVER-SIDE ACCESS	
	761B457010	DOOR-FRONT	bc
	761B461010	FRONT INPUT CONSOLE	bc
	761D981010	LED-INDICATOR-COVER	a
	761D982010	LED-INDICATOR-COVER	bc
	767D082050	MIRROR - 65"	c
	767D083020	MIRROR - 52"	a
	767D083030	MIRROR - 57"	b
	771D127010	PAD - CABINET BTM	
	915P049010	**LAMP-CARTRIDGE**	
AG9D00	299P220020	SURGE-SUPPRESSOR - DSS-302M	
F9A00	283P144080	FUSE - 125V 5A	
F9A01	283P144080	FUSE - 125V 5A	
F9A03	283P144060	FUSE - 125V 7A	
F9A04	283P144060	FUSE - 125V 7A	
F9D00	283D141040	FUSE - S10A 125V	
F9G00	283P075090	FUSE-CHIP - FCC20252ADTP	
F9G01	283P075090	FUSE-CHIP - FCC20252ADTP	
F9H00	283P075090	FUSE-CHIP - FCC20252ADTP	
F9H01	283P075090	FUSE-CHIP - FCC20252ADTP	
J2001	452C410010	CONNECTOR-HDMI	
J2101	452C410010	CONNECTOR-HDMI	
J3A01	440C393030	PIN-JACK-BOARD-1P	
J8401	451P246010	JACK-1394 - MINI	
J8402	451P246010	JACK-1394 - MINI	
J8F01	452C371020	CONNECTOR-DVI	
K9A10	287P111030	RELAY-POWER - LKS1AF-12V	
K9A20	287P111030	RELAY-POWER - LKS1AF-12V	
K9A21	287P111030	RELAY-POWER - LKS1AF-12V	
K9A30	287P111030	RELAY-POWER - LKS1AF-12V	a
PC9A10	268P115020	PHOTO-COUP - SFH615A-3	
PC9A20	268P115020	PHOTO-COUP - SFH615A-3	
PJ2J01	440C454010	PIN-JACK-BOARD-4P-2S	
PJ2J02	440C453010	PIN-JACK-BOARD-5P-2S	
PJ2J03	440C455020	PIN-JACK-BOARD-5P-2S	
PJ2J04	440C452010	PIN-JACK-BOARD-2P-1S	

Ref #	Part #	Part Name & Description	[#]
PJ2J05	440C452010	PIN-JACK-BOARD-2P-1S	
PJ2J06	440C452010	PIN-JACK-BOARD-2P-1S	
PJ2J11	440C412060	PIN-JACK-BOARD-3P-1S	bc
PJ2N11	440C412060	PIN-JACK-BOARD-3P-1S	a
TU100	295P540020	TUNER-NTSC/ATSC	
TU101	295P540030	TUNER-NTSC/ATSC	bc
X1500	285P459080	QTZ-CRYST - 25.140MHZ	
X2296	285P459090	QTZ-CRYST - 28.322MHZ	
X2M47	285P459050	QTZ-CRYST - SM-49 20.00MHz	
X7A13	285P459040	QTZ-CRYST - 16MHZ	
X7G01	285P391030	OSC - 74.175824MHZ	
X7G02	285P431040	QTZ-CRYST - 27.00MHz	
X8001	285P464020	QTZ-CRYST - 26.1621MHz	
X8201	285P403020	QTZ-CRYST - 32.768MHZ	
X8301	285P464010	QTZ-CRYST - 7.3728MHZ	
X8402	285P464040	QTZ-CRYSTAL - 24.576MHz	
X8403	285P464040	QTZ-CRYSTAL - 24.576MHz	
X8501	285P464030	QTZ-CRYSTAL - 18.24MHz	
X8G01	299P311010	CERAMIC-OSC - CSTCG24M0	
	299P313010	THERMAL-SENSOR (Lamp)	
X8H26	285P426050	QTZ-CRYST - 10.00MHz	
Z7K01	938P005010	UNIT-PREAMP - GP1UM283QK	

PRINTED CIRCUIT BOARDS

934C223001	ASSY-PWB-TERMINAL	
934C224001	ASSY-PWB-SIGNAL	bc
934C224003	ASSY-PWB-SIGNAL	a
934C225001	ASSY-PWB-DM	bc
934C225006	ASSY-PWB-DM	a
934C228001	ASSY-PWB-POWER	bc
934C228002	ASSY-PWB-POWER	a
935D889001	ASSY-PWB-FRONT	bc
935D890001	ASSY-PWB-PREAMP	
935D891001	ASSY-PWB-SW-LAMP	
935D893001	ASSY-PWB-E2P	
935D902001	ASSY-PWB-CONT2	bc
935D903001	ASSY-PWB-CONT3	bc
935D904001	ASSY-PWB-CONT4	a
935D906001	ASSY-PWB-FRONT2	a
938P059010	OPTICAL-ENGINE 57" xHD5	b
938P059020	OPTICAL-ENGINE 65" xHD5	c
938P059050	OPTICAL-ENGINE 52" xHD5	a
938P060010	BALLAST - LAMP PWR	

COSMETIC PARTS

716C044010	BADGE - BRAND	ab
760A019010	INLAY TERMINAL	bc
760A019040	INLAY TERMINAL	a
760C789010	INLAY-FRONT CONSOLE	bc

ACCESSORIES

290P137010	REMOTE-CONTROL - V33/V33+
I/B WD52631	GUIDE-OWNERS: WD-52631
I/B WD57731	GUIDE-OWNERS: WD-57731
I/B WD65731	GUIDE-OWNERS: WD-65731
I/QR WD52631	GUIDE-QUICK REF: WD-52631
I/QR WD57731	GUIDE-QUICK REF: WD-57731
I/QR WD65731	GUIDE-QUICK REF: WD-65731

[#] Model Legend: (a) WD-52631, (b) WD-57731, (c) WD-65731

Ref #	Part #	Part Name & Description	[#]

SCREEN ASSEMBLY PART

WD-52631

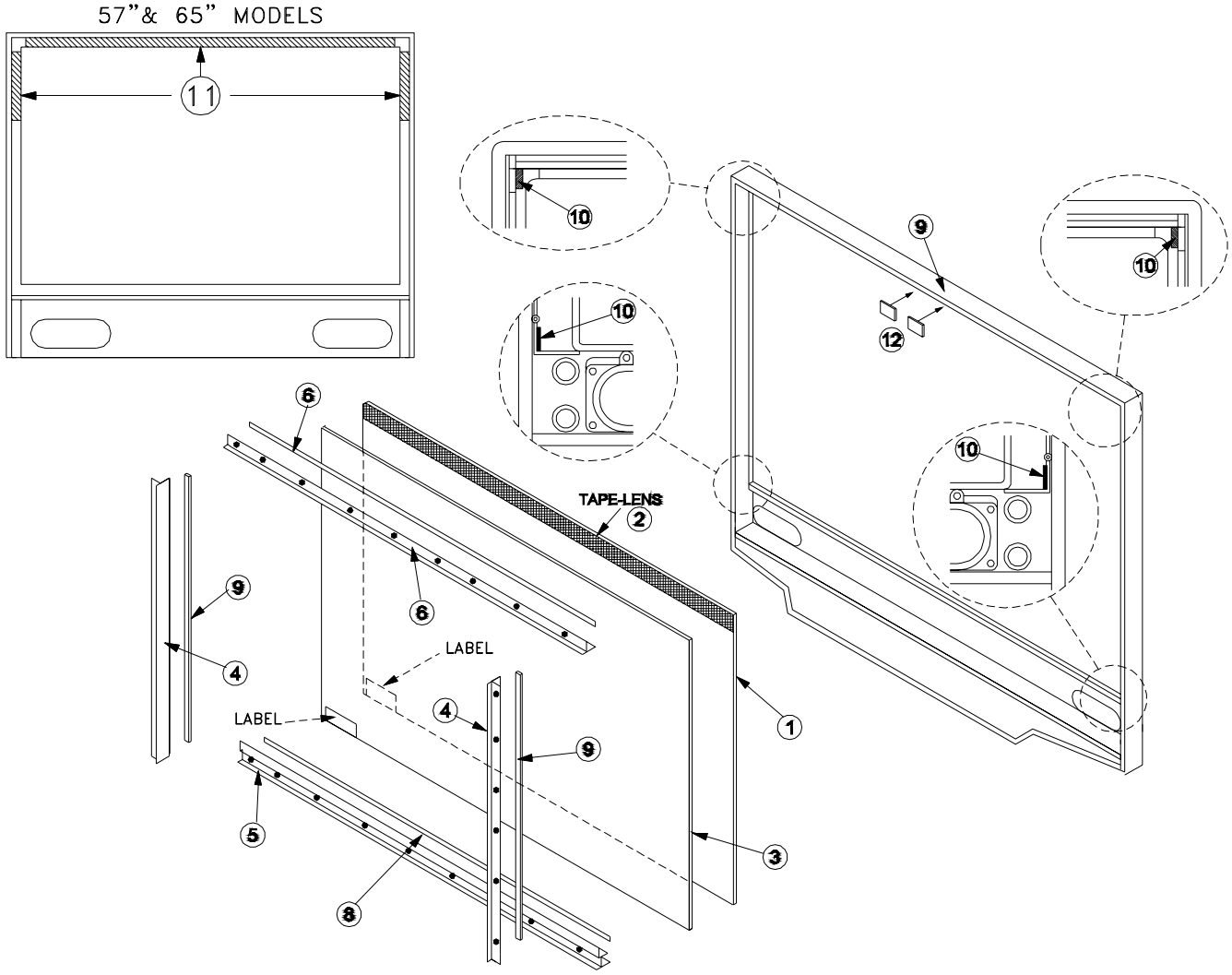
(1)	491P199050	SCREEN-LENTICULAR	
(2)	491P202090	LENS-FRESNEL	
(3)	593B211020	SCREEN-HOLDER-S	
(4)	593B212020	SCREEN-HOLDER-B	
(5)	593B214020	SCREEN-HOLDER-T	
(6)	622C455040	SCREEN-CUSHION-TOP	
(7)	622C474040	SCREEN-CUSHION-BTM	
(8)	622C474080	SCREEN-CUSHION-SIDE	
(9)	761A339010	BEZEL-FRONT	

WD-57731

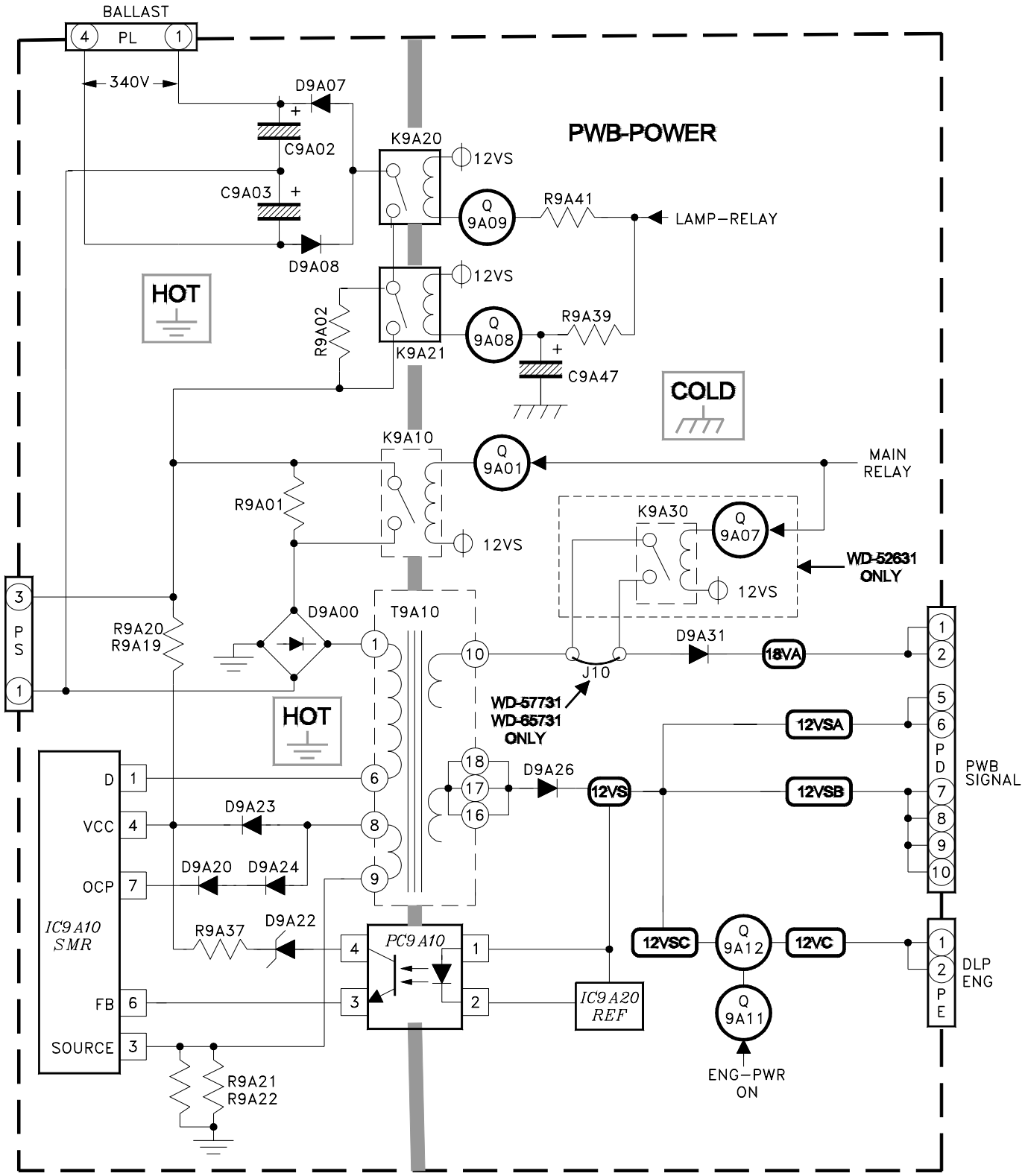
(1)	491P199080	SCREEN-LENTICULAR	
(2)	491P202080	LENS-FRESNEL	
(3)	593B211030	SCREEN-HOLDER-S	
(4)	593B213010	SCREEN-HOLDER-B	
(5)	593B214030	SCREEN-HOLDER-T	
(6)	622C455030	SCREEN-CUSHION-TOP	
(7)	622C474030	SCREEN-CUSHION-BTM	
(8)	622C474070	SCREEN-CUSHION-SIDE	
(9)	761A327010	BEZEL-FRONT	
(10	622C487010	SCREEN-CUSHION-CORNER	
(11)	620D204020	TAPE-BEZEL	
(12)	622C487020	SCREEN-SPACER-TOP-SMALL	

WD-65731

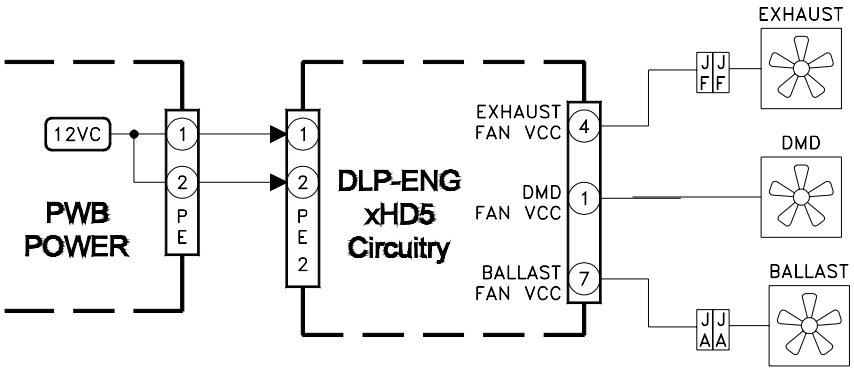
(1)	491P199030	SCREEN-LENTICULAR	
(2)	491P202030	LENS-FRESNEL	
(3)	593B211050	SCREEN-HOLDER-S	
(4)	593B213020	SCREEN-HOLDER-B	
(5)	593B214040	SCREEN-HOLDER-T	
(6)	622C455010	SCREEN-CUSHION-TOP	
(7)	622C474020	SCREEN-CUSHION-BTM	
(8)	622C474050	SCREEN-CUSHION-SIDE	
(9)	761A328010	BEZEL-FRONT	
(10	622C487010	SCREEN-CUSHION-CORNER	
(11)	620D204020	TAPE-BEZEL	
(12)	622C487020	SCREEN-SPACER-TOP-SMALL	



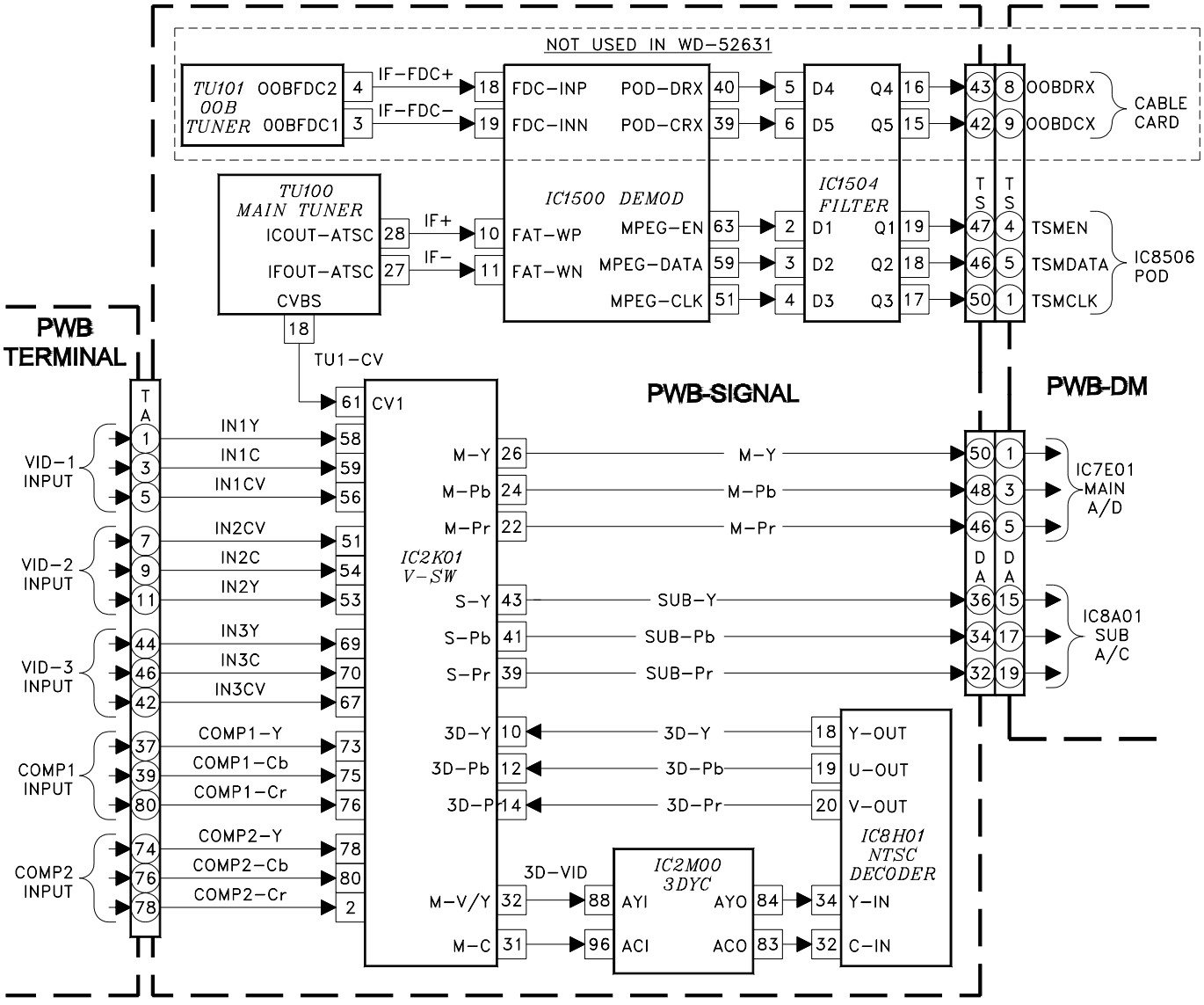
MAIN POWER SUPPLY



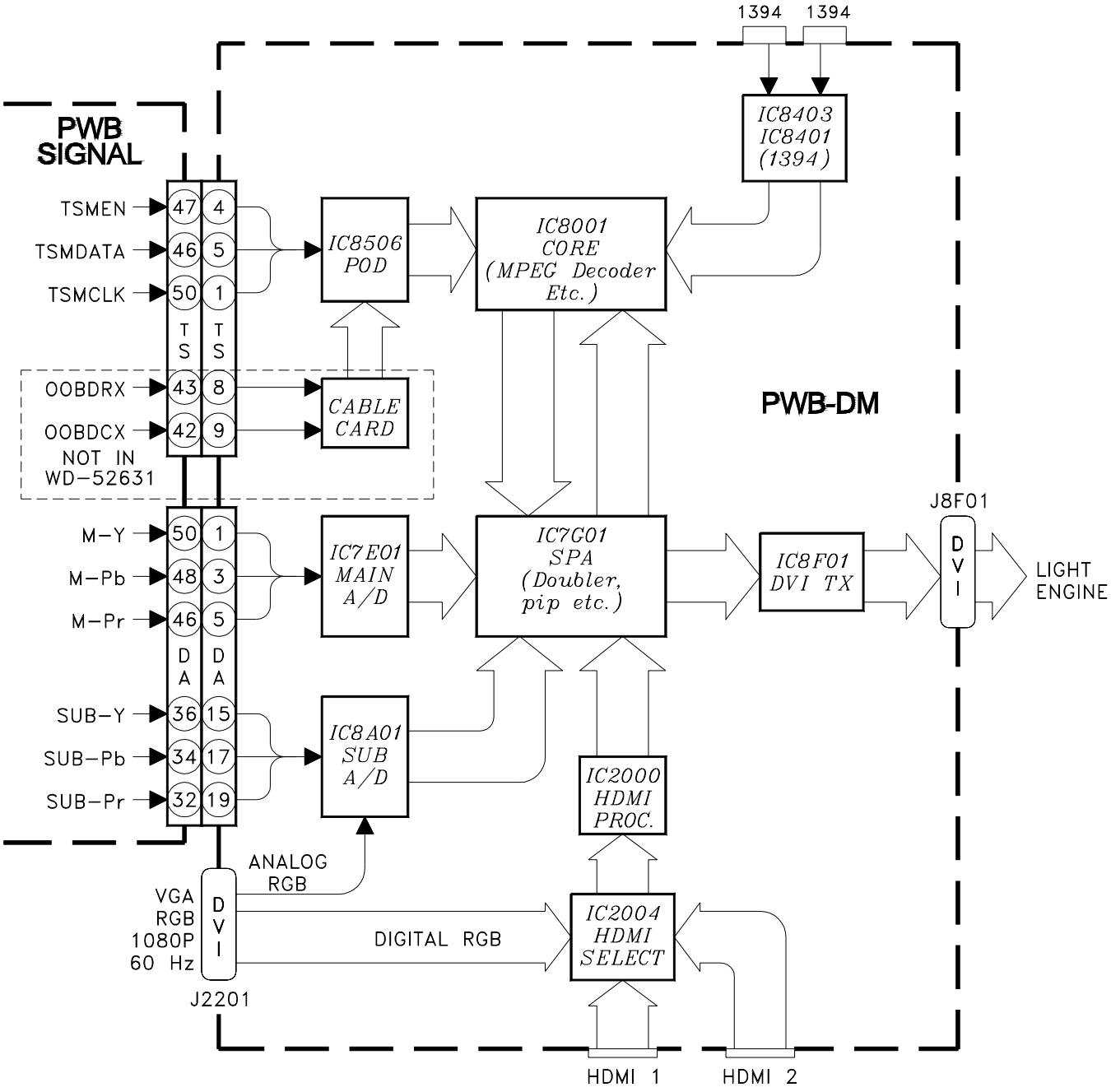
xHD5 Engine & Fan Supplies



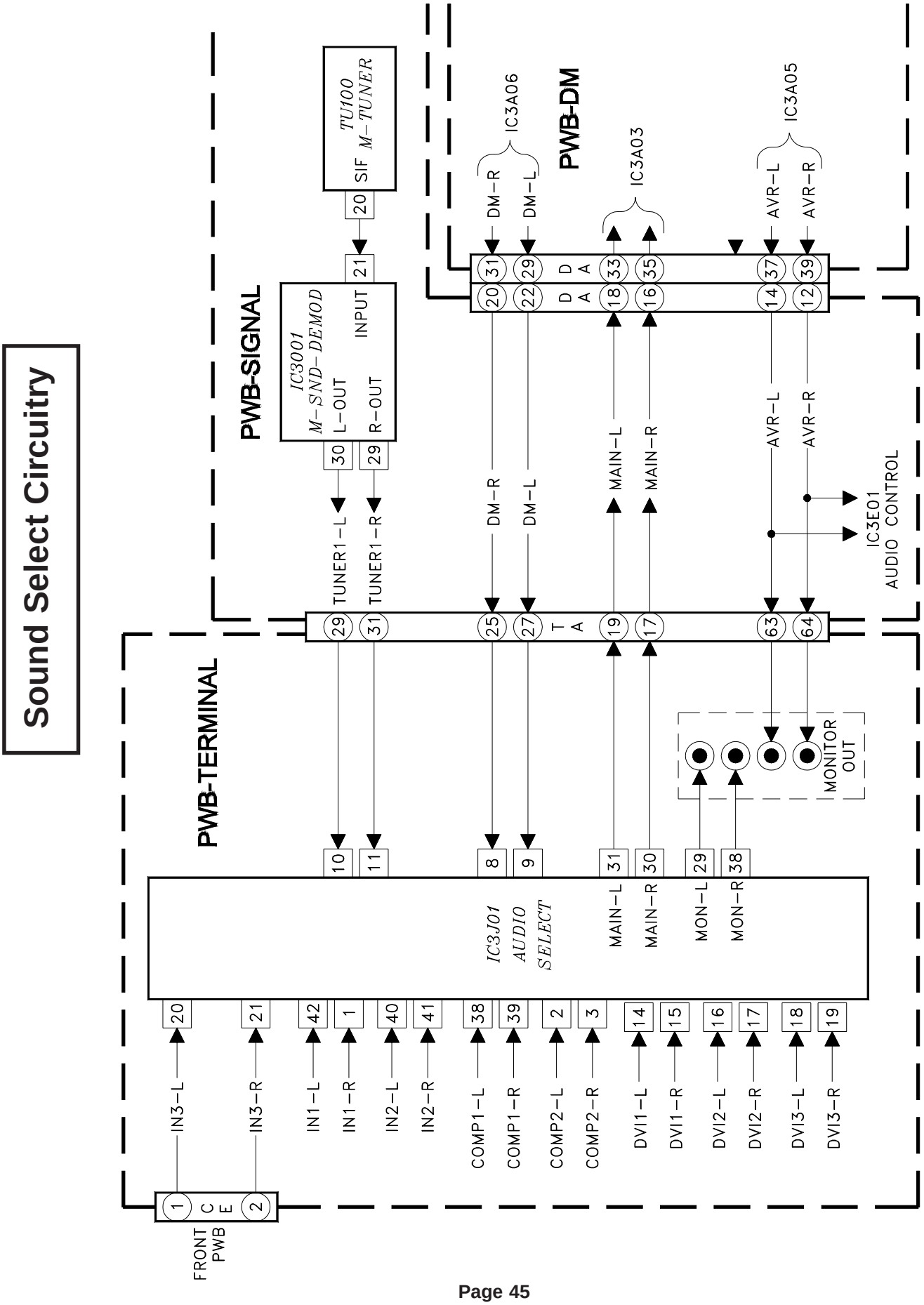
PWB-SIGNAL VIDEO PATH

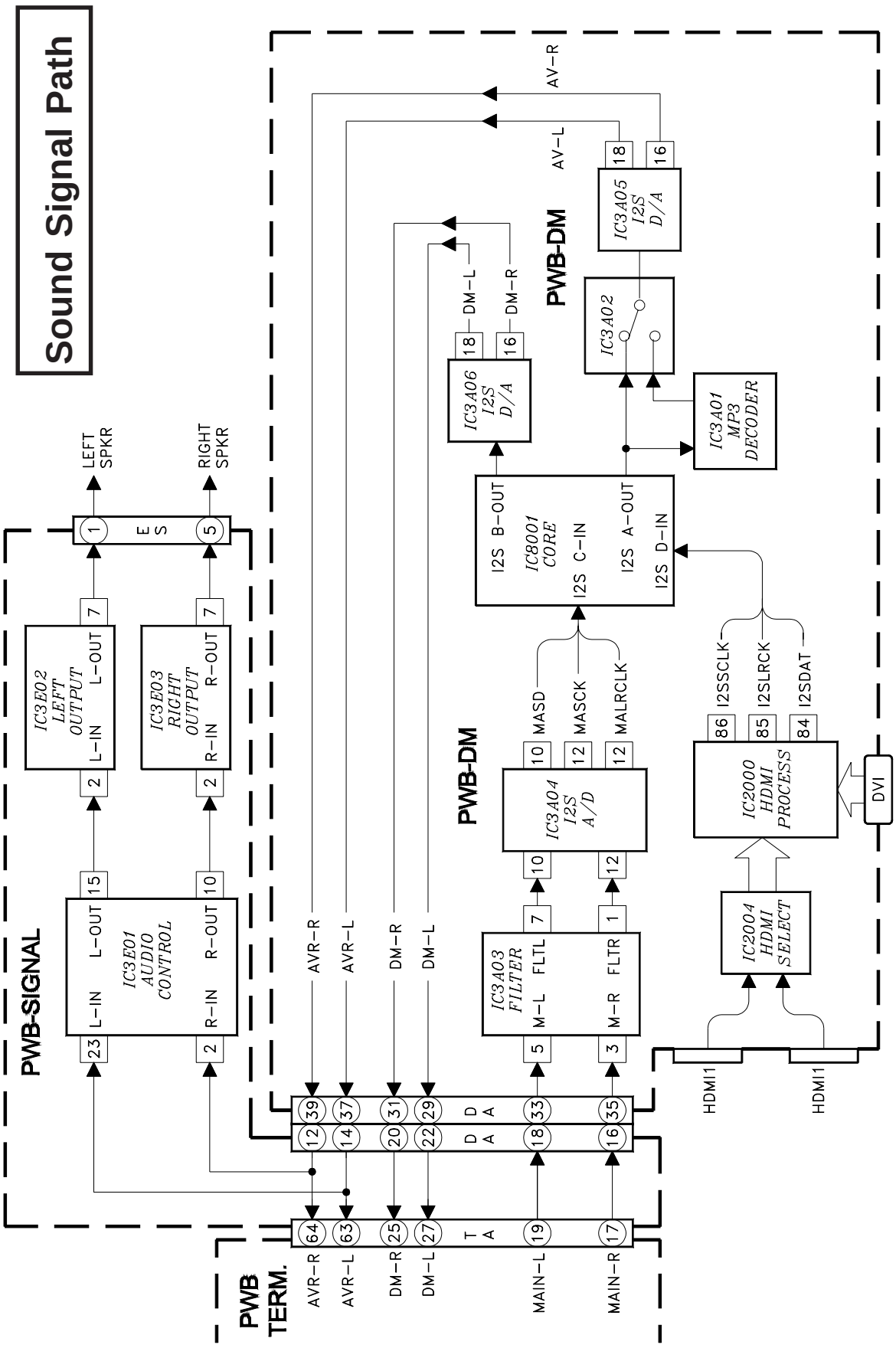


PWB-DM Video Path

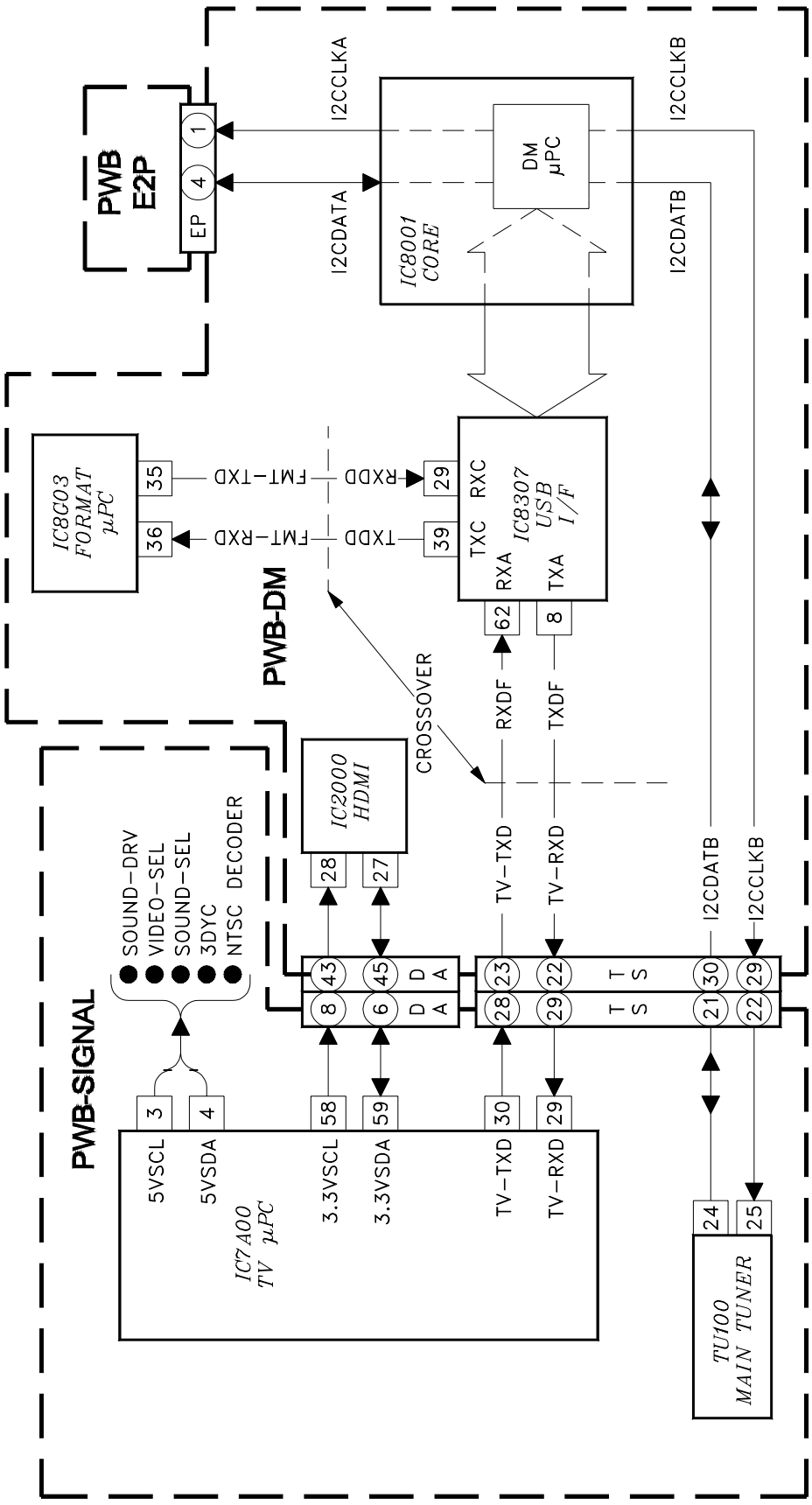


Sound Select Circuitry

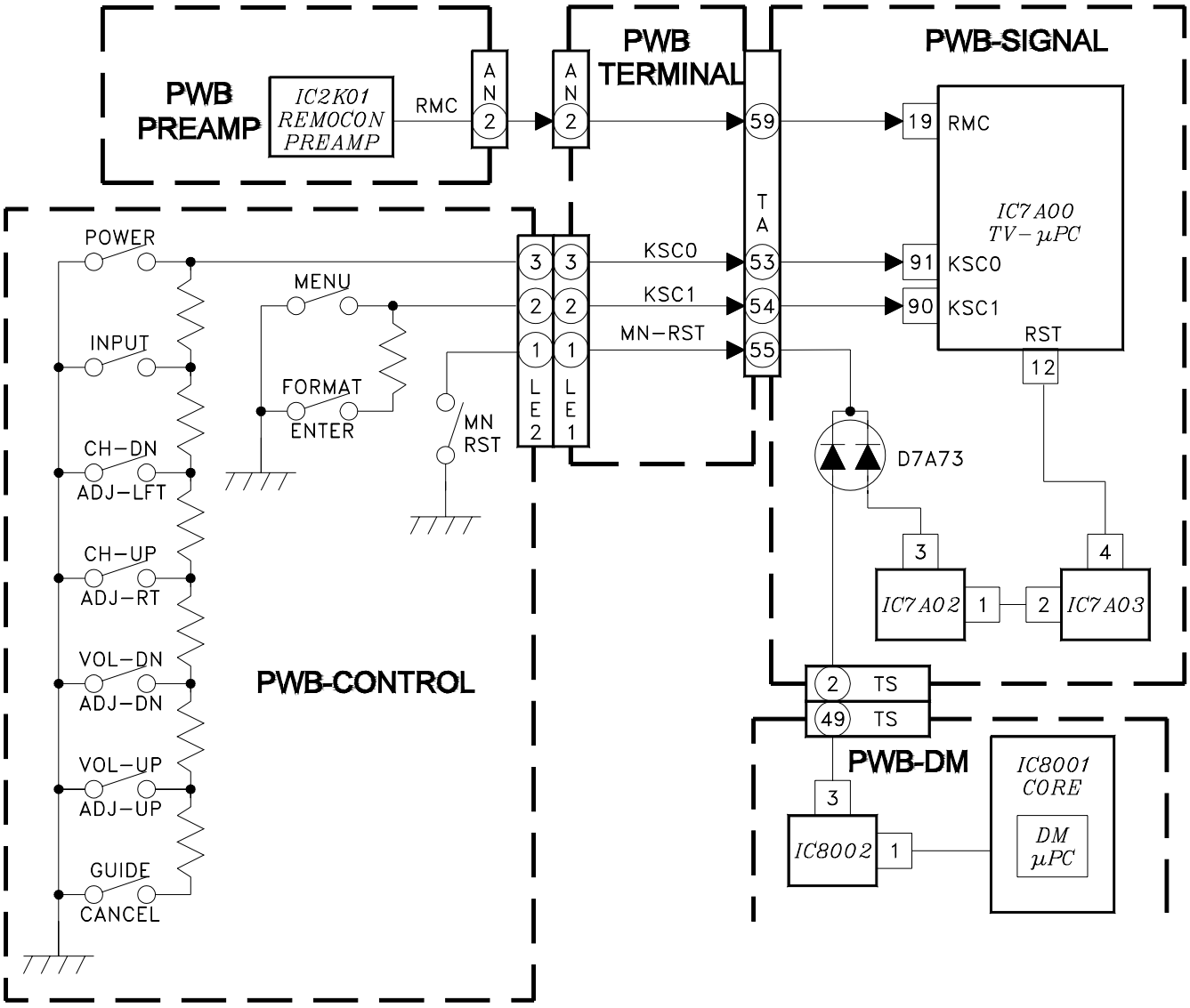



Sound Signal Path
PWB-SIGNAL
PWB-DM
PWB-DM
PWB TERM.
LEFT SPKR
RIGHT SPKR
IC3E02 LEFT OUTPUT
IC3E03 RIGHT OUTPUT
IC3E01 AUDIO CONTROL
IC3A04 I2S A/D
IC3A03 FILTER
IC8001 CORE
IC3A06 I2S D/A
IC3A05 I2S D/A
IC3A02
IC3A01 MP3 DECODER
IC2004 HDMI SELECT
IC2000 HDMI PROCESS
DVI
HDMI1
HDMI1
I2SSCLK
I2SLRCK
I2SDAT
MASD
MASCK
MALRCLK
AVR-R
AVR-L
DM-R
DM-L
AV-R
AV-L
DM-L
DM-R
MAIN-L
MAIN-R

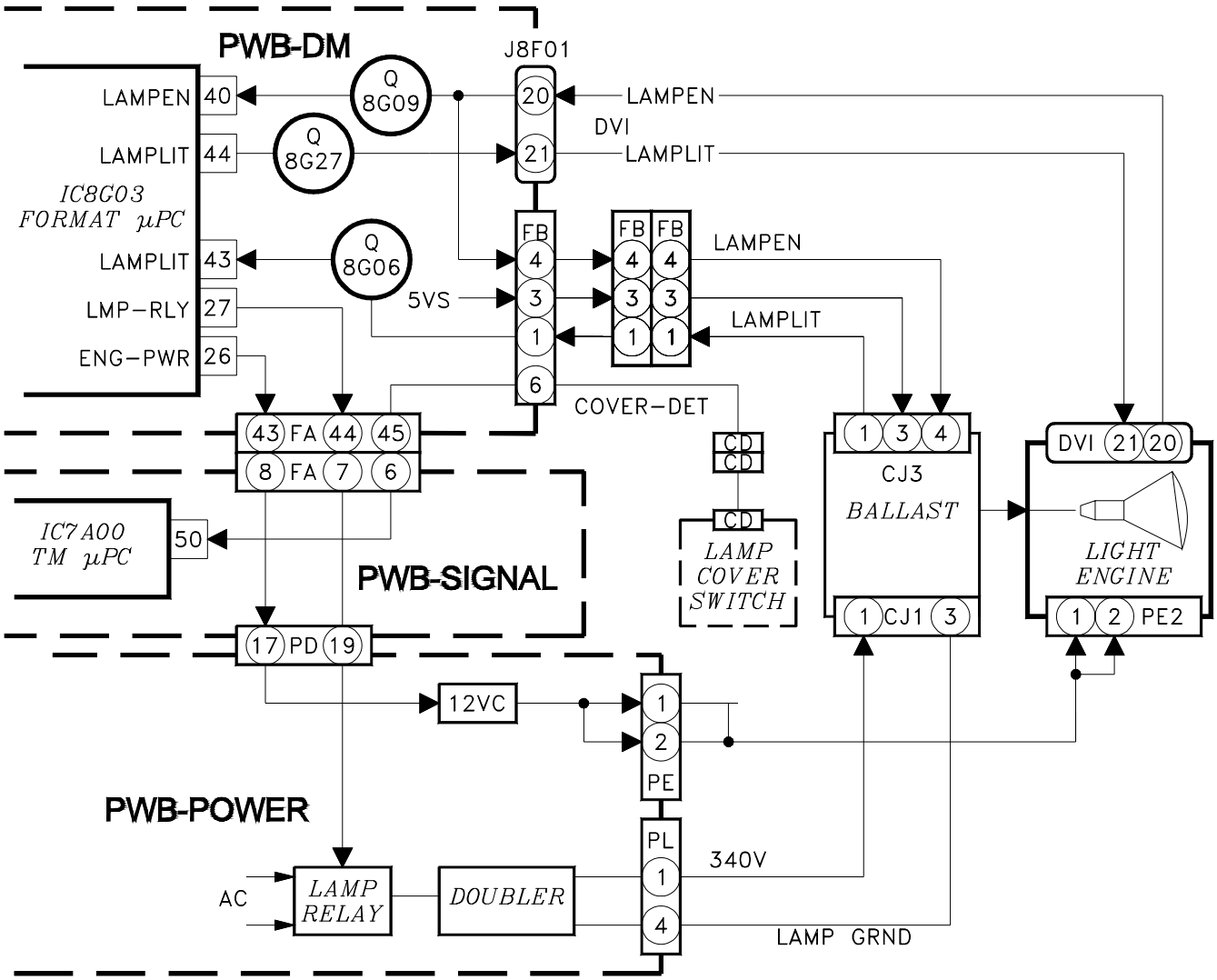
Overall Control Circuitry



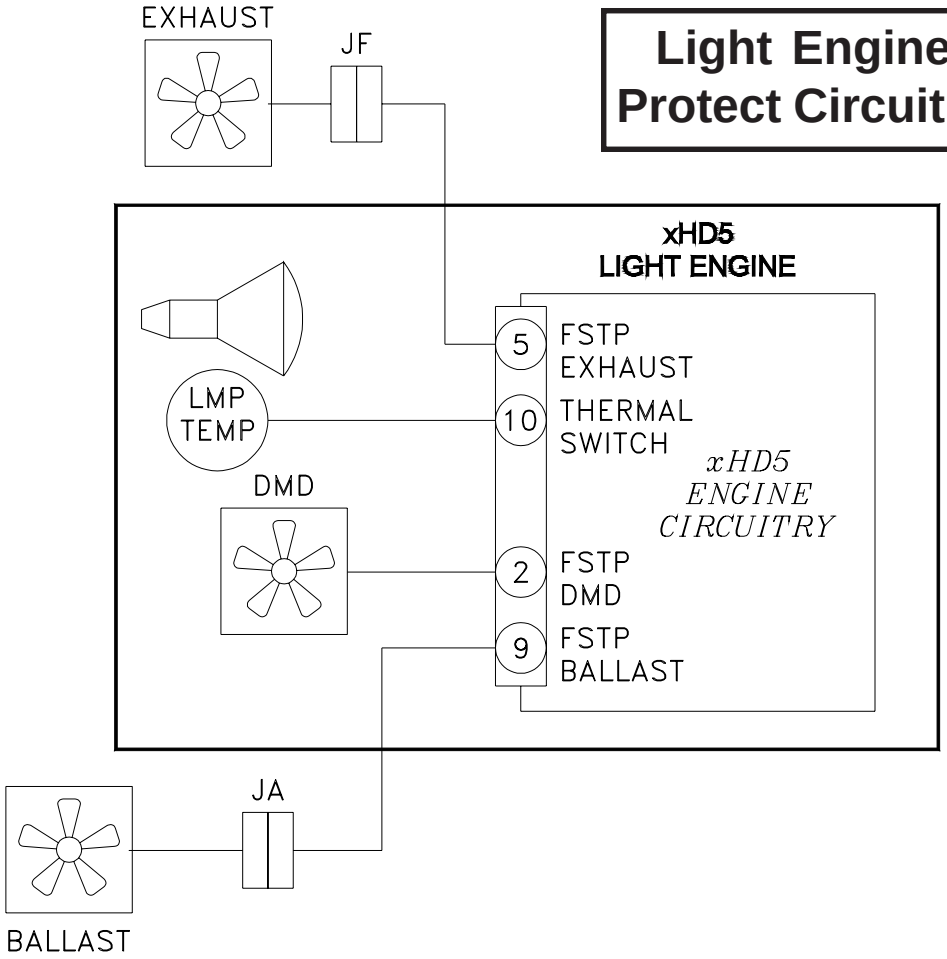
Command Input Circuit



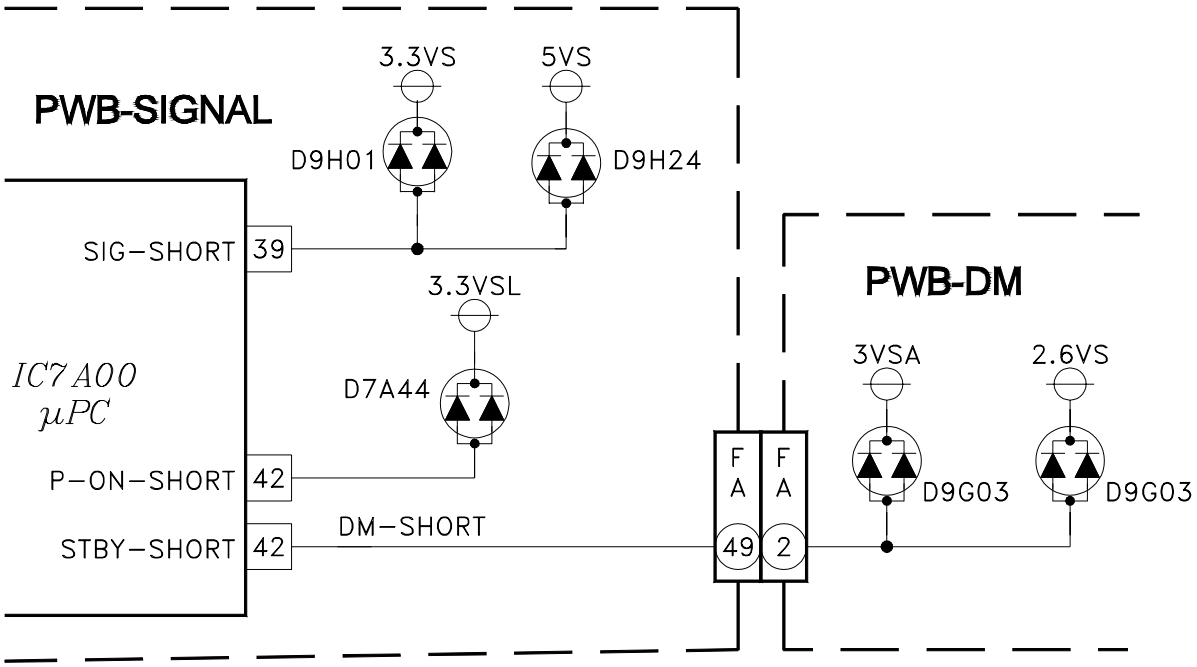
Lamp Control Circuitry



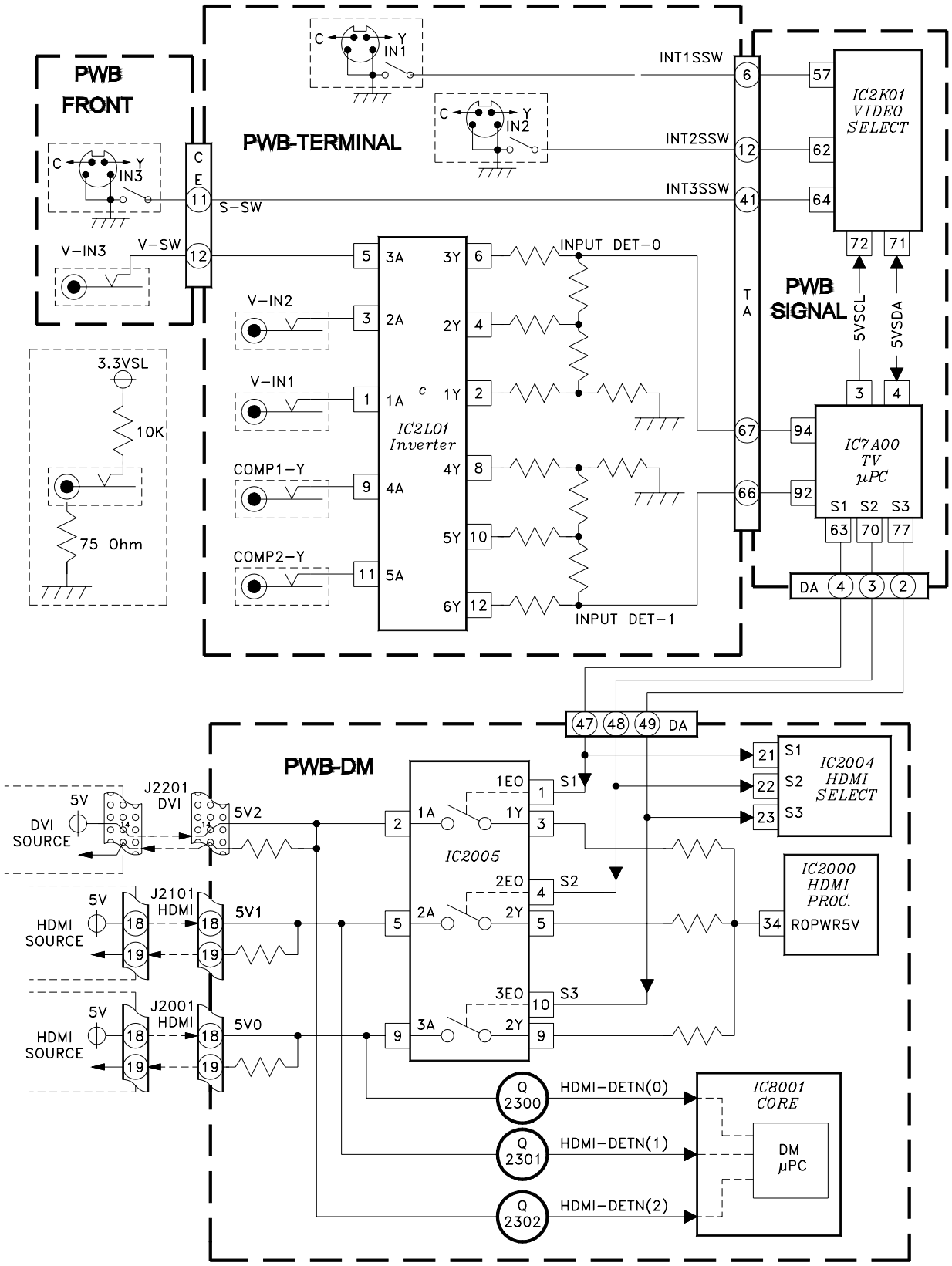
Light Engine Protect Circuitry

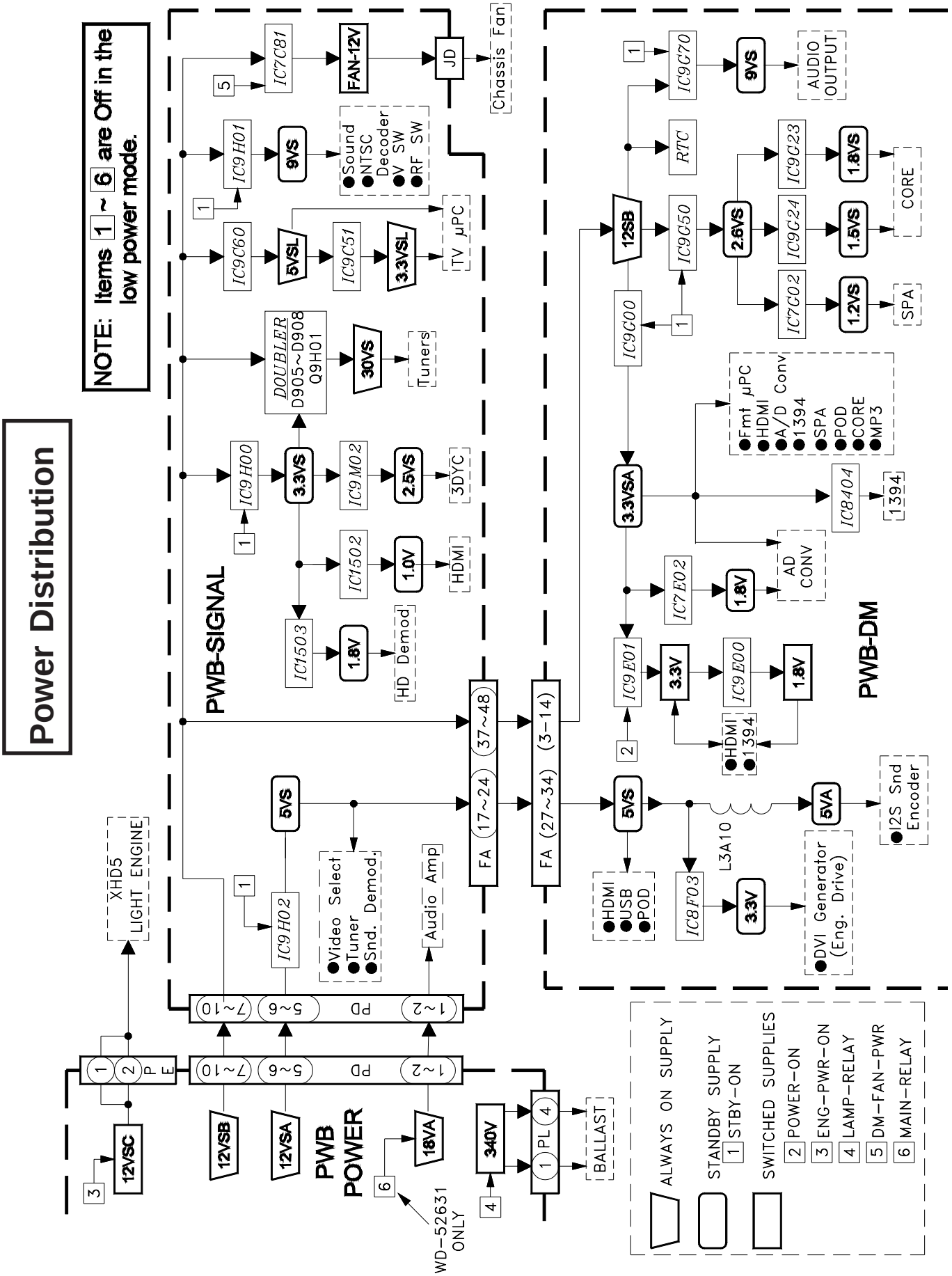


Short Protect Circuit



Auto Input Detection




Power Distribution
NOTE: Items 1 ~ 6 are Off in the low power mode.
PWB-SIGNAL
PWB-DM
PWB POWER
WD-52631 ONLY
XHD5
LIGHT ENGINE
BALLAST
Chassis Fan
JD
FAN-12V
IC7C81
IC9H01
9VS
Sound
NTSC Decoder
V SW
RF SW
IC9C60
5VSL
IC9C51
3.3VSL
TV µPC
DOUBLER
D905~D908
Q9H01
30VS
Tuners
IC9H00
3.3VS
IC9M02
2.5VS
3DYC
IC1503
1.8V
HD Demod
IC1502
1.0V
HDMI
IC9H02
5VS
Video Select
Tuner
Snd. Demod.
Audio Amp
FA (17~24) (37~48)
FA (27~34) (3-14)
12VSC
12VSB
12VSA
18VA
340V
PL
PD
P E
IC9G00
12SB
IC9G50
IC9G70
RTC
9VS
AUDIO OUTPUT
2.6VS
IC9G24
IC9G23
1.5VS
1.8VS
CORE
IC7C02
1.2VS
SPA
3.3VSA
IC7E02
1.8V
AD CONV
IC8404
1394
Fmt µPC
HDMI
A/D Conv
1394
SPA
POD
CORE
MP3
IC9E01
3.3V
IC9E00
1.8V
HDMI
1394
IC8F03
3.3V
L3A10
5VA
I2S Snd Encoder
DVI Generator (Eng. Drive)
HDMI
USB
POD
ALWAYS ON SUPPLY
STANDBY SUPPLY
1 STBY-ON
SWITCHED SUPPLIES
2 POWER-ON
3 ENG-PWR-ON
4 LAMP-RELAY
5 DM-FAN-PWR
6 MAIN-RELAY

PWB-FRONT

PWB-FRONT2

WD52631 ONLY

PWB PREAMP

DM FAN

FRONT 1394

PWB-TERMINAL

PWB-SIGNAL

PWB-DM

PWB-POWER

WD57731 & WD65731 ONLY

WD-52631

CONTROL2

CONTROL3

CONTROL4

PWB-SW-LAMP

DVI CABLE

EXHAUST FAN

DMD_FAN

LAMP

LAMP BALLAST

BALLAST FAN

PMD1000 xHD5

DLP ENGINE

★ NOTES

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter
2. Wave form were taken with standard color bar signal.
3. TP13 etc. show test points.
4. CAPACITOR

Value	Not indicated	PF, for numbers more than 1 uF, for numbers less than 1
Dielectric strength	Not indicated : 50V	
Tolerance	Not indicated = +/- 10%	No tolerance is indicated for electrolytic capacitor and +/- 20%
	G=+/-2% P=+100% Q=+30%	C=+/-0.25PF
	J=+/-5% -0% -10%	D=+/-0.5PF
	K=+/-10% Z=+80% T=+200%	F=+/-1PF
	M=+/-20% -20% -0%	D=+/-2PF
Type	Parts except for chips	Not indicated : Ceramic capacitor MPE : Polyester capacitor MPP : Polypropylene film capacitor ALUMI : Aluminum electrolytic capacitor TF : Twin film capacitor SEMI : Semiconductor Ceramic capacitor MET : Metallised paper METP : Metallised plastic film capacitor METPE : Metallised polyester capacitor OSPF,PP : Polyester polypropylene film capacitor STY : Styrol capacitor TANTA or TANTB : Tantalum capacitor : Electrolytic capacitor NPL : Non polarised electrolytic capacitor
	IC chips	Not indicated:Ceramic capacitor chip : Electrolytic capacitor NPL : Non polarised electrolytic capacitor chip
Characteristic (Only for ceramic capacitor)	Not indicated : F or B (high dielectric percentage) CH, SL, etc. : Temperature compensating types	

5. RESITOR

Value	Not indicated = Ohm K = 1,000 Ohm M = 1,000,000 Ohm	
Wattage	Parts except for chips	Not indicated : 1/4W or 1/6W
	Chips	Not indicated : 1/10W
Toler ance	Not indicated = +/-5% D = +/-0.5% J = +/-5% F = +/-1% K = +/-10%	
Type	I Parts except for chips	Not indicated : Carbon resistor FR : Fixed composition resistor MTX : Metal oxide film resistor(Type H) NC : Cemented resistor W : Wire wound resistor MF : Metal film resistor MTF : Metal plate cement resistor MFP : Metal liner resistor
	II chips	Not indicated : chip resistor

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

SERVICE TECHNICIAN WARNING;

X-RADIATION PRECAUTION

THIS PRODUCT INCLUES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PROSECTION

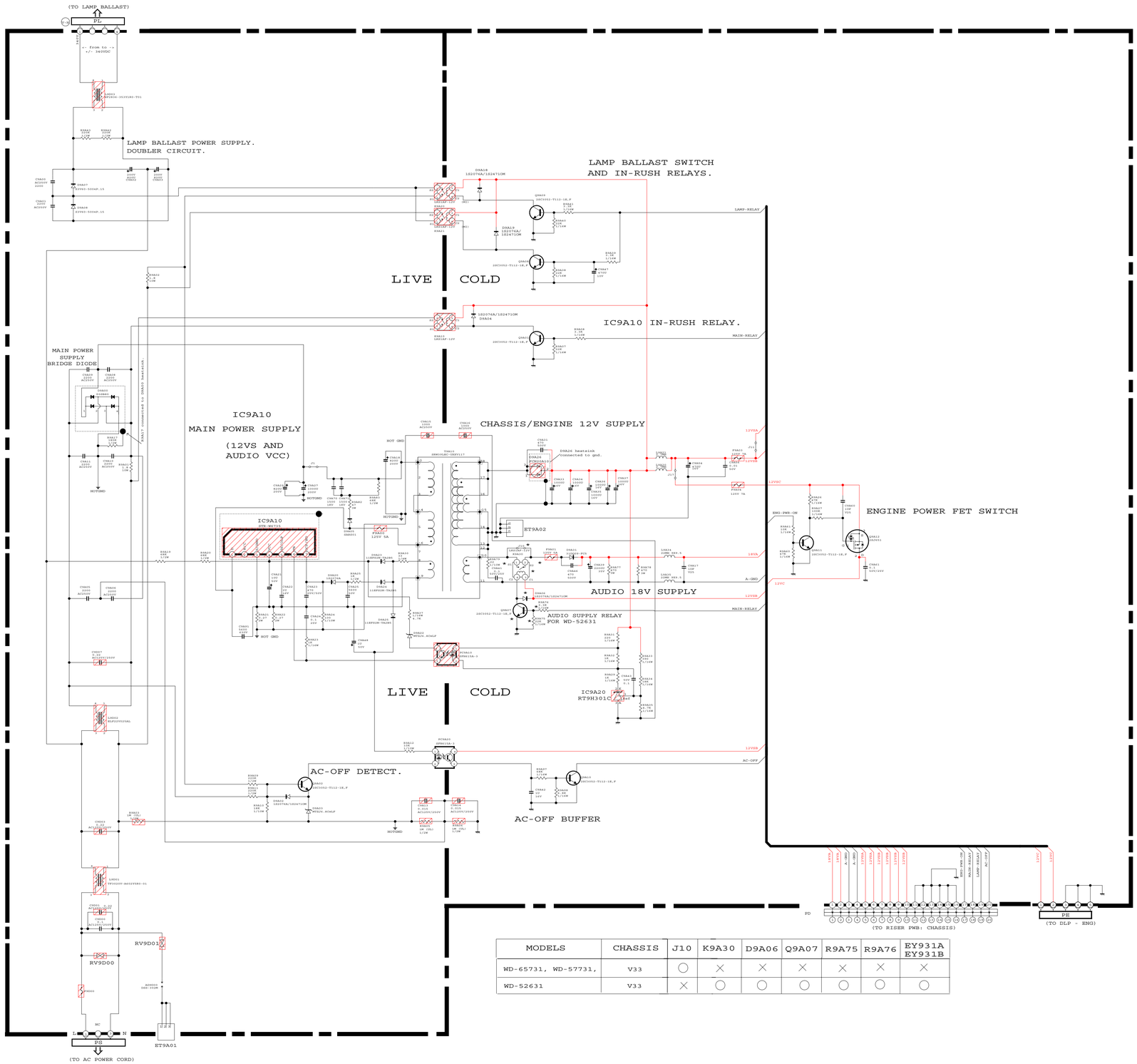
TO AVOID POSSIBLE TO X-RADIATION TAKE RADIATION PROTECTIVE MEASURE FOR PERSONNEL DURONG SERVICING.

SEE SERVICE INSTRUCTION FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMSDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PWMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]



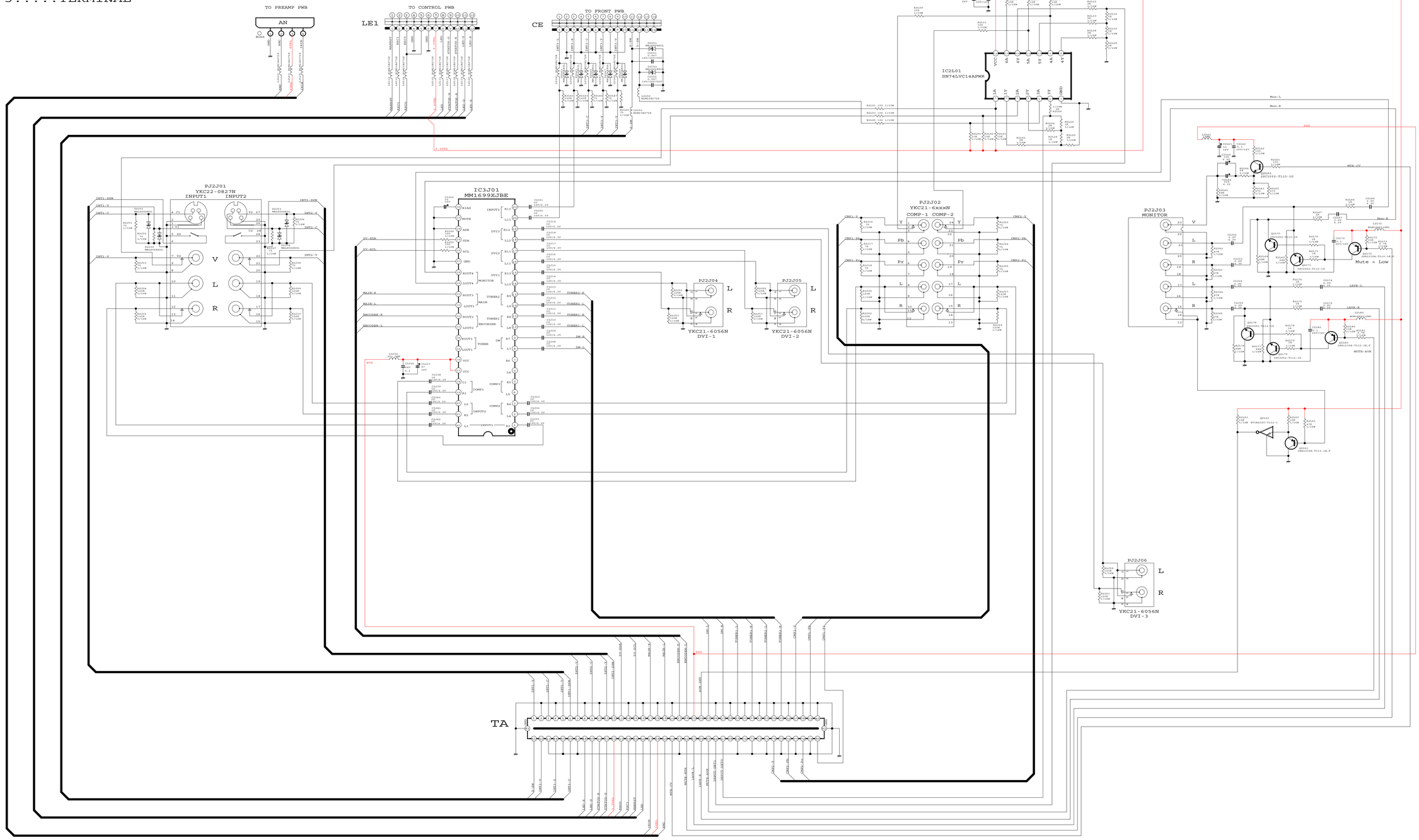
MODELS	CHASSIS	J10	K9A30	D9A06	Q9A07	R9A75	R9A76	EY931A EY931B
WD-65731, WD-57731,	V33	○	×	×	×	×	×	×
WD-52631	V33	×	○	○	○	○	○	○

CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PWTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/R2P/SWLAMP]

PG 3.....TERMINAL

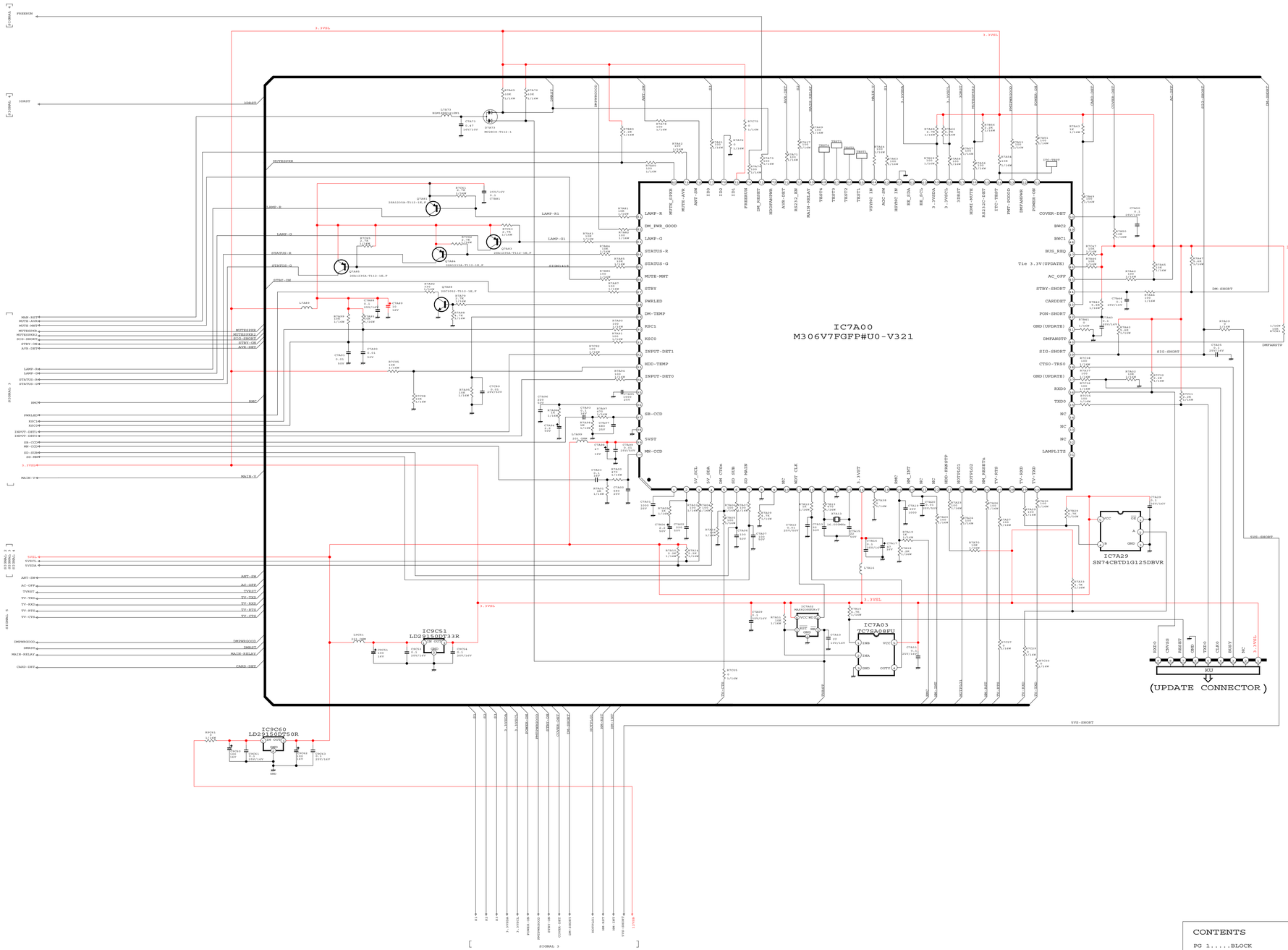


CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 4.....SIGNAL1 [TV MICRO]



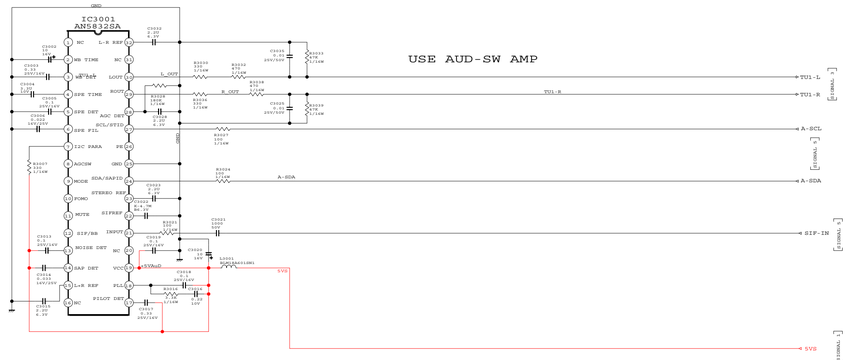
CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

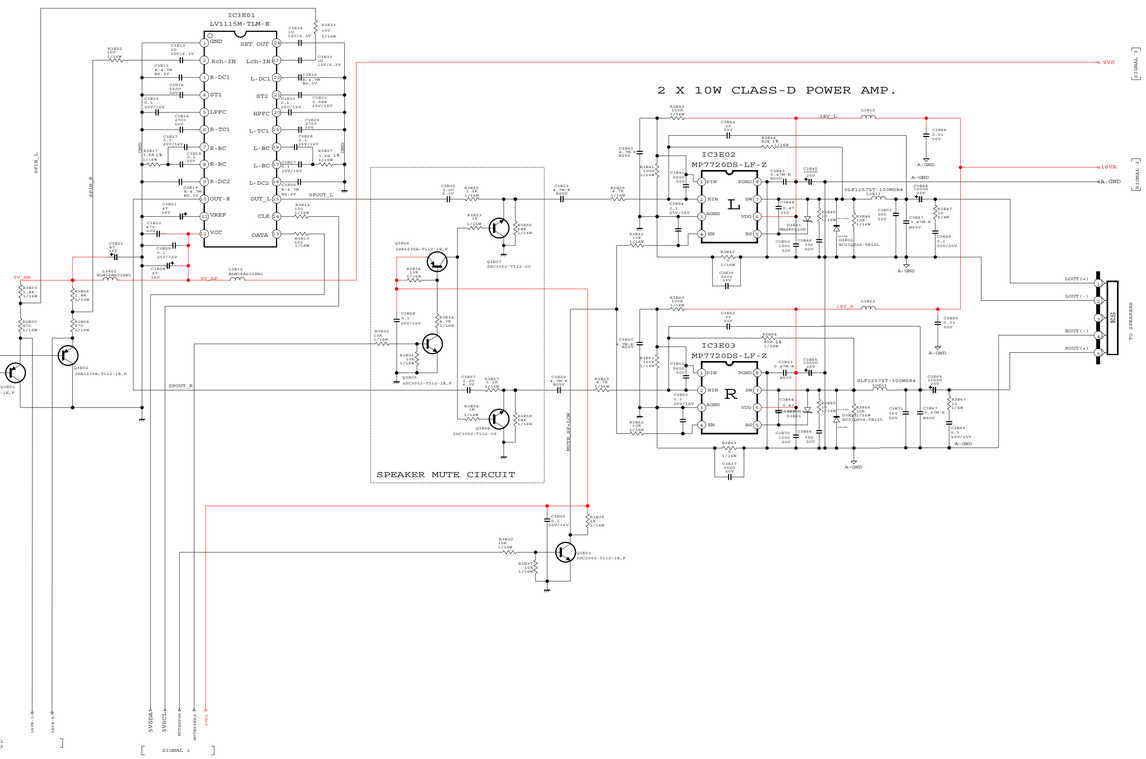
PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMMDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 5.....SIGNAL2 [AUDIO / PIC MICRO]

AUDIO DEMODULATOR



SURROUND PROCESSOR



CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PAGE 5

PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]

VIDEO SWITCHING 2

IC2K01
AN15870A

SIGNAL 12V TO 3.3V
BUCK CONVERTER

IC9H00
MP2355DN-LP-Z

12VSB

STBY-ON

SIG-SHORT

RISER 12V TO 5V BUCK CONVERTER

12VSA

Q9H10
S17804DN-T1-E3

Q9H11
S17804DN-T1-E3

5V, 3.5A MAX.

IC9H01
BA00CC0WFP

SUB SYNC DETECT

SUB CCD

MAIN SYNC DETECT

MAIN CCD

IC2K04
SN74LVC14APWR

TA

DA

FA

TO/FROM POWER

PD

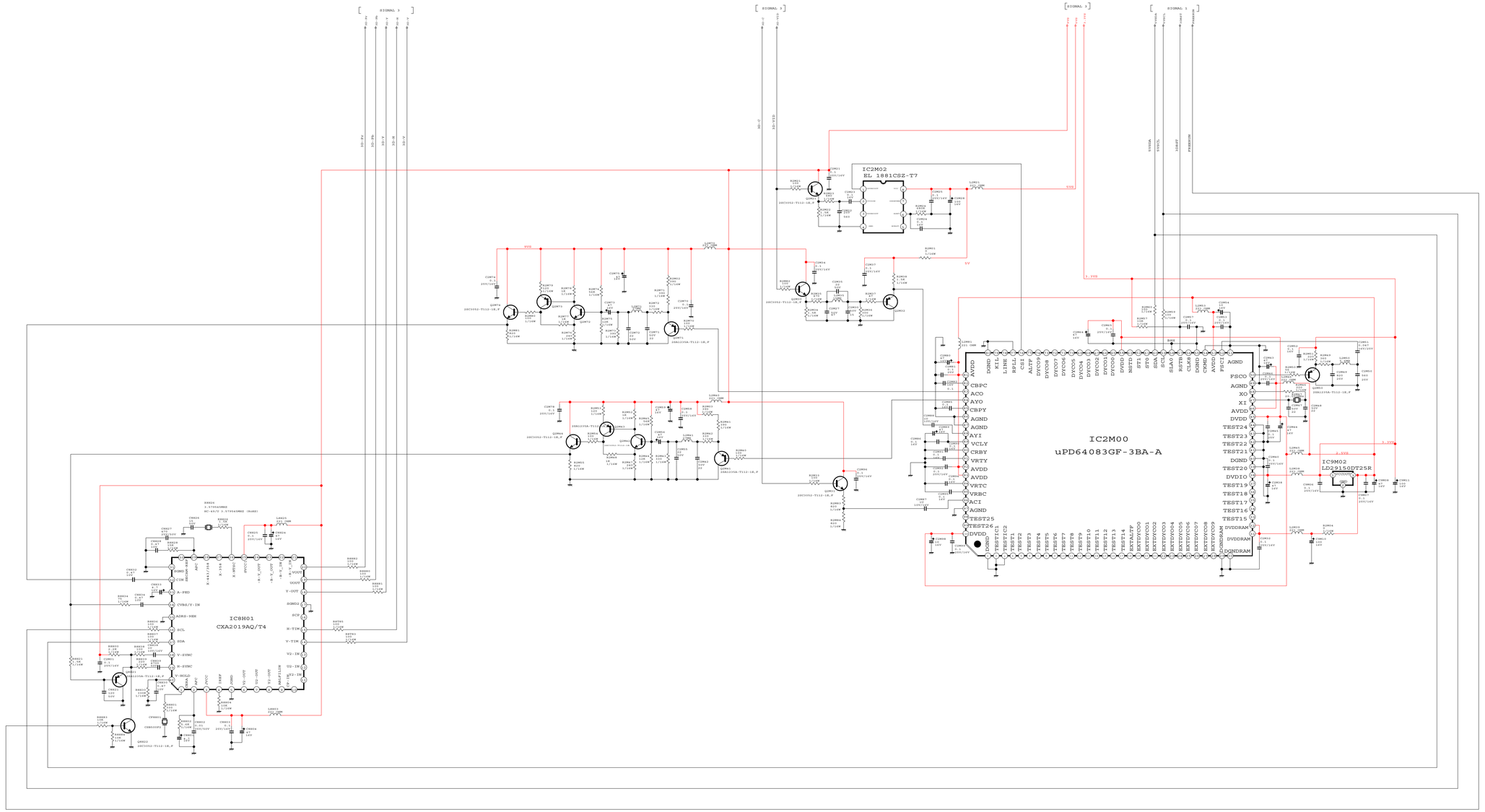
TO DM PWB

CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/P]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 7.....SIGNAL4 [3DYC / NTSC DECODER]

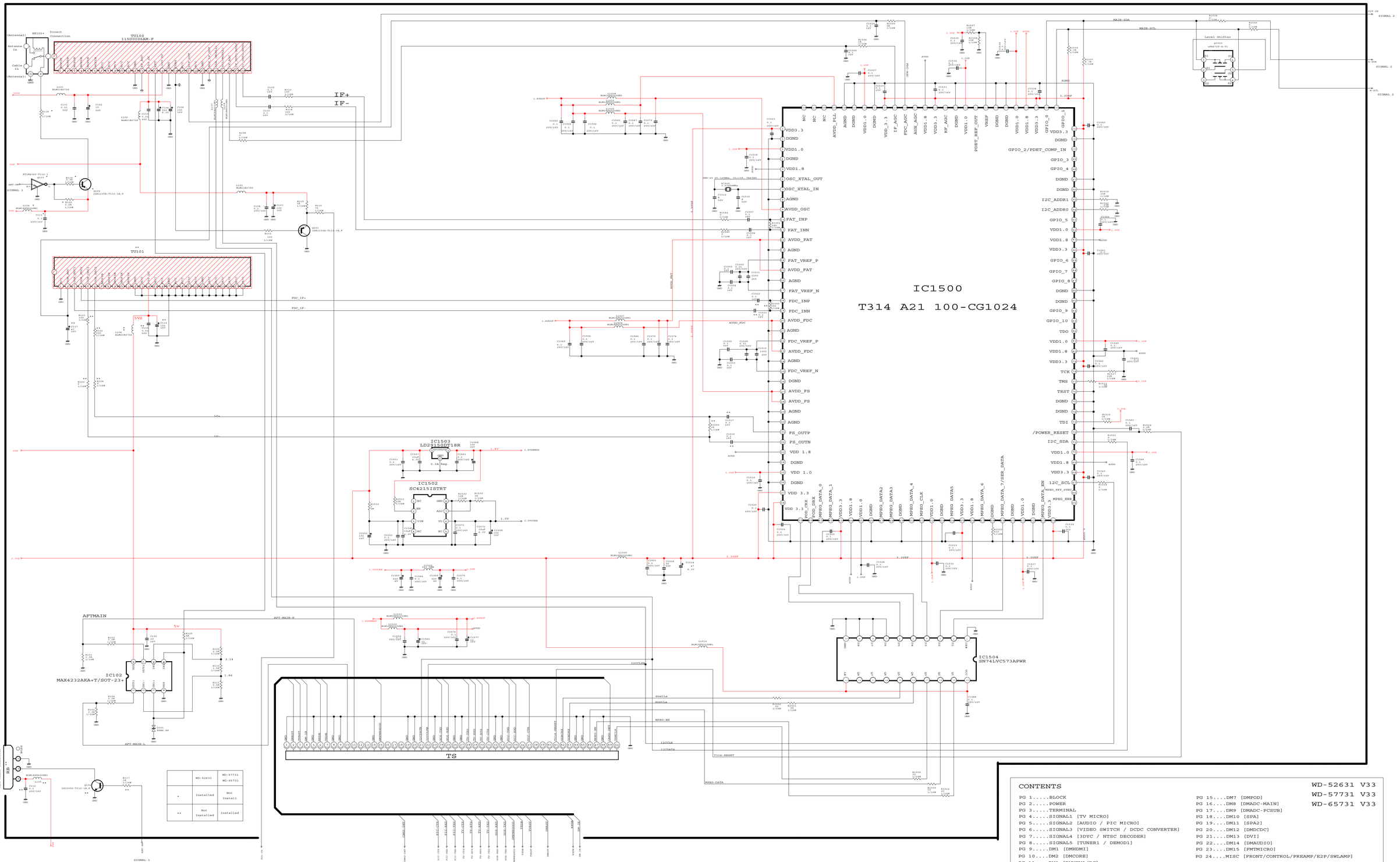


CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 8.....SIGNAL5 [TUNER1 / DEMOD1]



CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMEDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

IC2000
SiI9023CTU144

IC2004
TMDS341PFCR

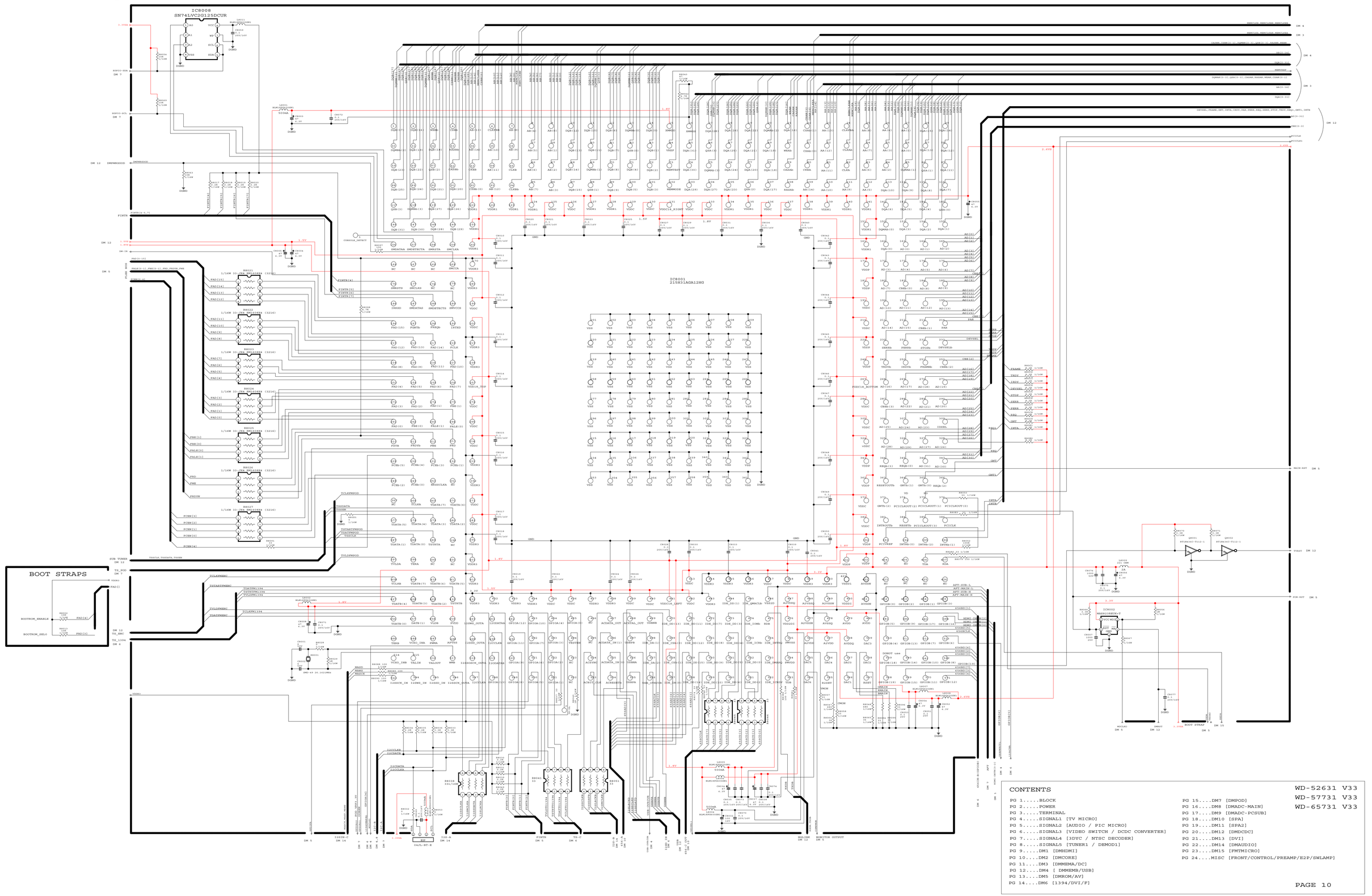
PIN	Signal Assignment
1	T.M.D.S. Data 2+
2	T.M.D.S. Data 2 Shield
3	T.M.D.S. Data 2-
4	T.M.D.S. Data 1+
5	T.M.D.S. Data 1 Shield
6	T.M.D.S. Data 1-
7	T.M.D.S. Data 0+
8	T.M.D.S. Data 0 Shield
9	T.M.D.S. Data 0-
10	T.M.D.S. Clock+
11	T.M.D.S. Clock Shield
12	T.M.D.S. Clock-
13	CEC
14	Reserve
15	DDC Clock
16	DDC Data
17	Ground (return for +5V,
18	+5V Power
19	Hot Plug Detect
Shell	FG
(20)	Location Post (GND)
(21)	Location Post (GND)
(22)	Location Post (GND)
(23)	Location Post (GND)

CONTENTS

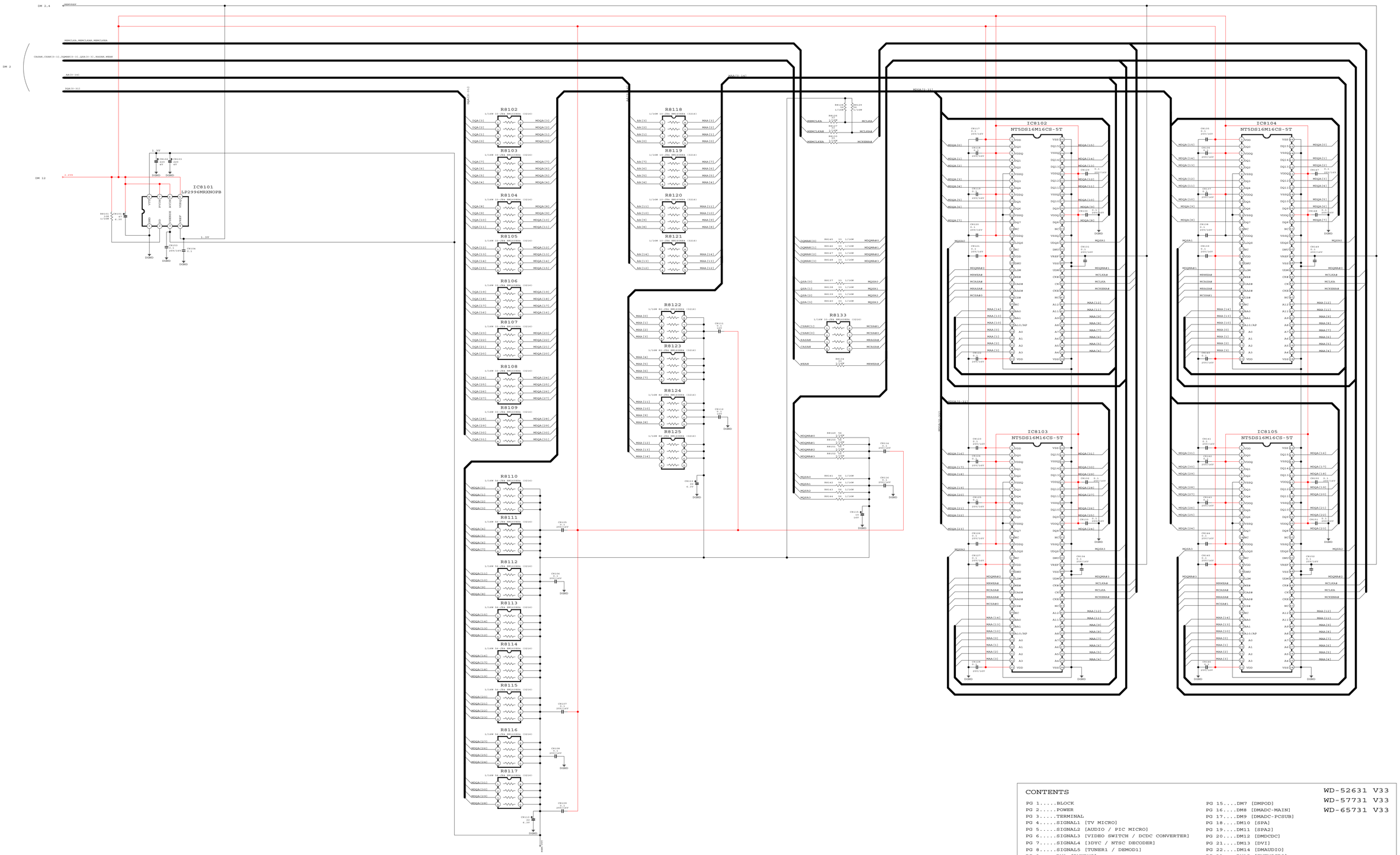
WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 10....DM2 [DMCORE]



PG 11....DM3 [DMMEMA/DC]

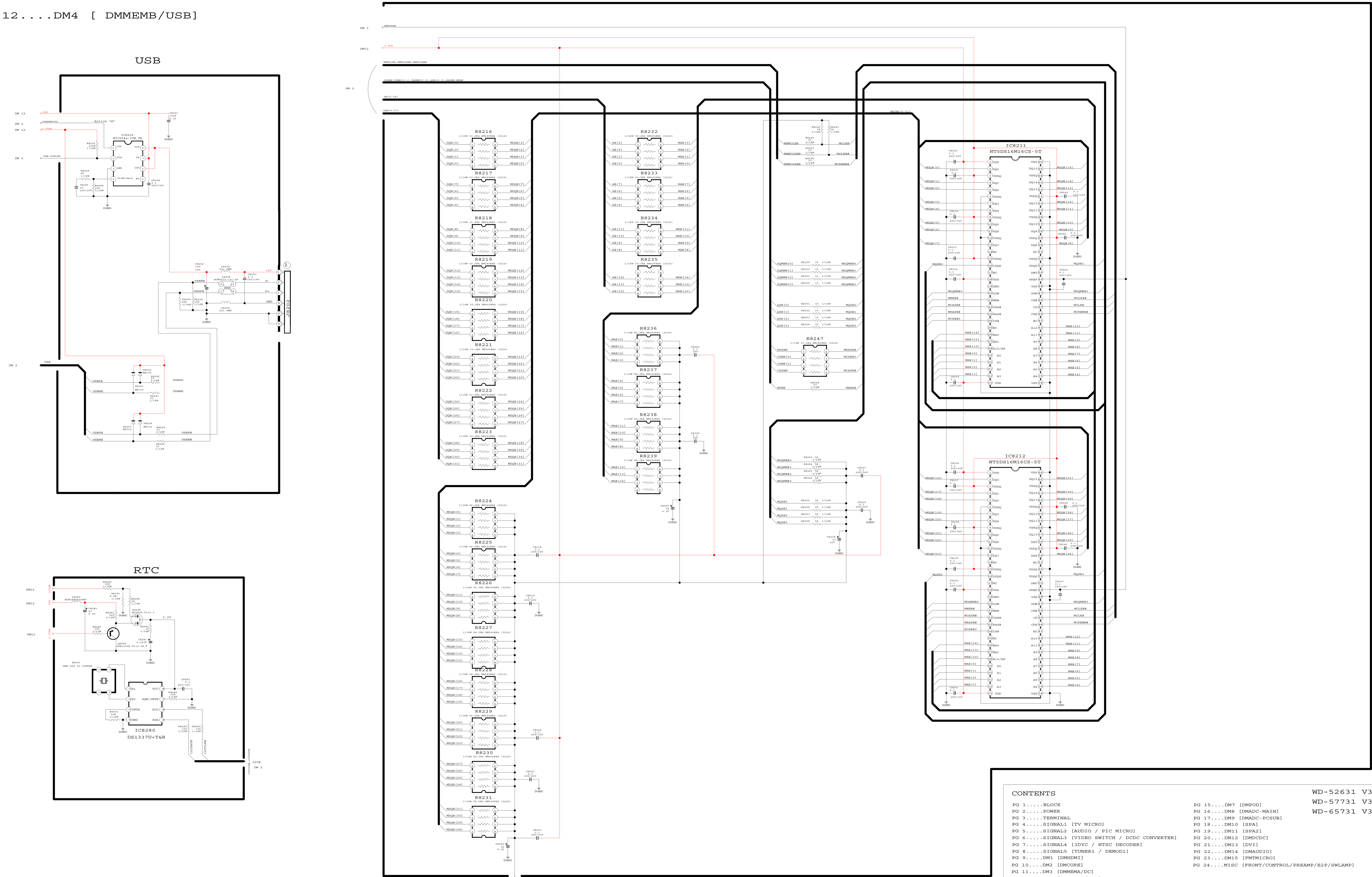


CONTENTS

PG 1....BLOCK
PG 2....POWER
PG 3....TERMINAL
PG 4....SIGNAL1 [TV MICRO]
PG 5....SIGNAL2 [AUDIO / PIC MICRO]
PG 6....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7....SIGNAL4 [3DYC / NTSC DECODER]
PG 8....SIGNAL5 [TUNNER1 / DEMOD1]
PG 9....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMBOM/AV]
PG 14....DM6 [1394/DVI/P]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 12....DM4 [DMMEMB/USB]



CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
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PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 13....DM5 [DMROM/AV]

CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
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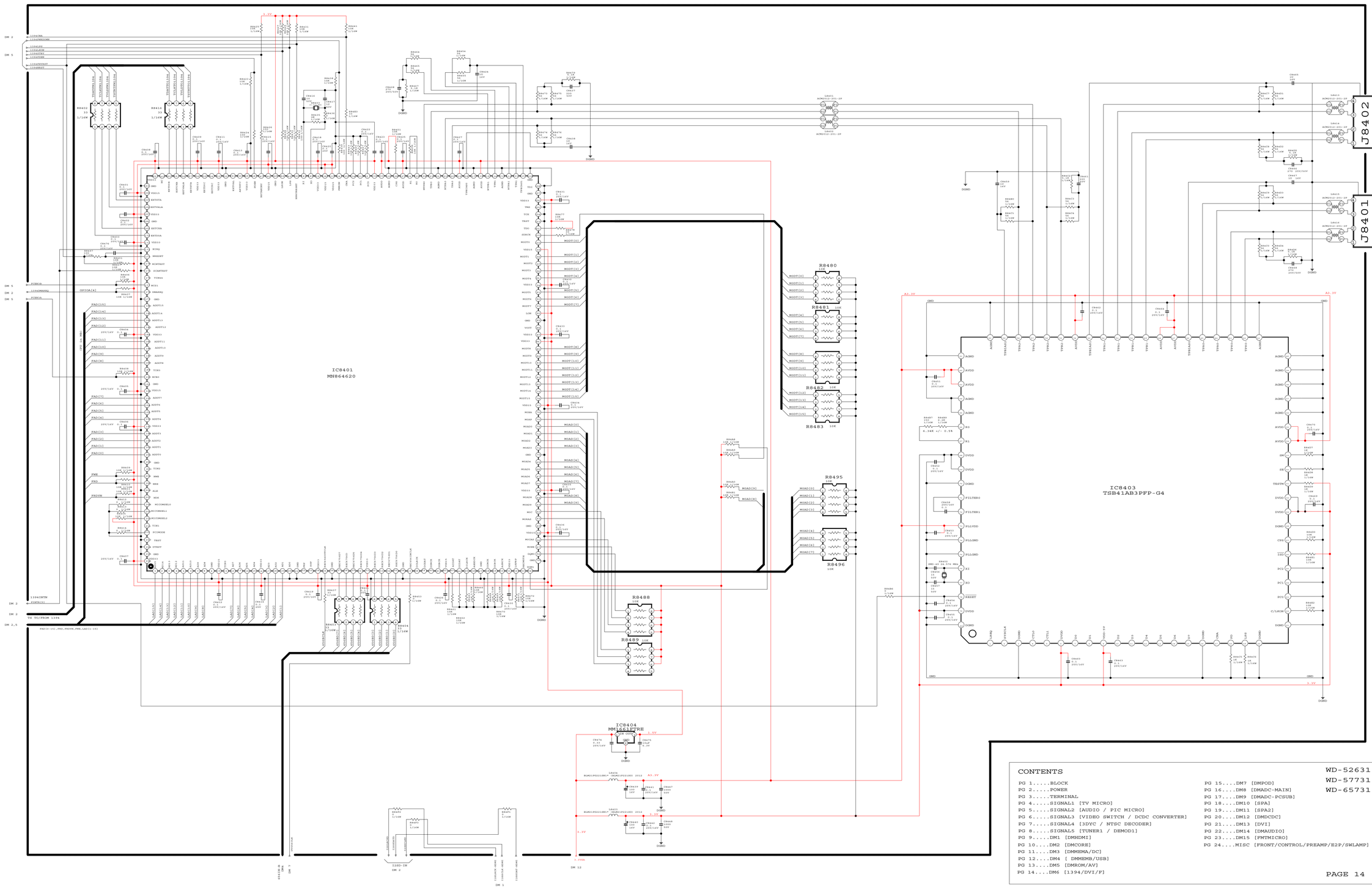
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 14....DM6 [1394/DVI/F]



CONTENTS

PG 1....BLOCK
PG 2....POWER
PG 3....TERMINAL
PG 4....SIGNAL1 [TV MICRO]
PG 5....SIGNAL2 [AUDIO / PIC MICRO]
PG 6....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7....SIGNAL4 [3DYC / NTSC DECODER]
PG 8....SIGNAL5 [TUNER1 / DEMOD1]
PG 9....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PAGE 14

PG 15....DM7 [DMPOD]

CONNECTOR TO PWB-SIGNAL

IC8506
109866

IC8501
ICS443M-20LFT

IC8502
SN74LVC245APWR

IC8503
SN74LVC573APWR

IC8505
SN74LVC573APWR

IC8507
SN74LVC125APWR

IC8508
SN74LVC125APWR

IC8511
MIC2040-1YMM TR

IC8512
MIC2040-1YMM TR

IC8513
MIC2040-1YMM TR

IC8006
AT24C64AN-10SU-2.7

FOR CABLE

R8557
33
1/16W

R8558
33
1/16W

CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 16....DM8 [DMADC-MAIN]

TO DM 2

TO DM 12

MAIN PR

MAIN C/PB

MAIN Y

IC7E01
AD80138KSTZ

ADC

WHEN PWRDN LOW, ENTER LOW POWER MODE

TO DM 10

TO DM 5,9,10

TO DM 10

TO DM 12

CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 17....DM9 [DMADC-PCSUB]

TO DM 12 | TO DM 12 | TO DM 12 | TO DM 1

TO DM 15

TO DM 1

TO DM 8 | TO DM 10 | TO DM 10 | TO DM 10

ADC

IC8A01

AD80139KSTZ V33,V33Y,V33+
AD9984KSTZ-170 V34,V35

IC8A04
SN74LVT245BPWR

R8A28 56
R8A27 56
R8A24 56
R8A23 56
R8A19 56
R8A20 56

CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDRO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

TO DM 11

TO DM 5

TO DM 2

TO DM 1 HDMI

TO DM 13

TO DM 15

TO DM 9

TO DM 5,8,9,10

TO DM 8

IC7G01
MB87Q1530PB-RSE1

IC7G02
SC1566I5MT-2.5.TR

CONTENTS

PG 1....BLOCK
PG 2....POWER
PG 3....TERMINAL
PG 4....SIGNAL1 [TV MICRO]
PG 5....SIGNAL2 [AUDIO / PIC MICRO]
PG 6....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7....SIGNAL4 [3DYC / NTSC DECODER]
PG 8....SIGNAL5 [TUNER1 / DEMOD1]
PG 9....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

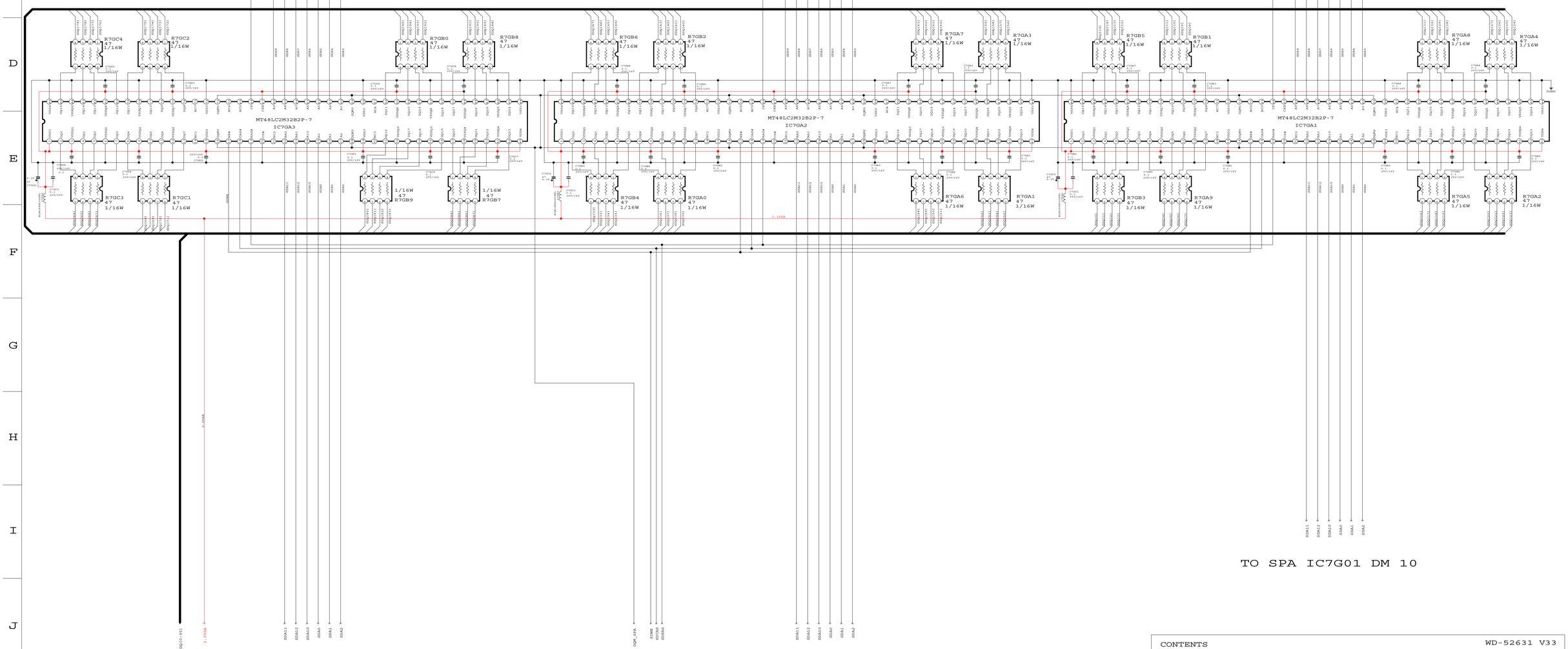
WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 19....DM11 [SPA2]

TO SPA IC7G01 DM 10

TO SPA IC7G01 DM 10

TO SPA IC7G01 DM 10



TO SPA IC7G01 DM 10

TO SPA IC7G01 DM 10

TO SPA IC7G01 DM 10

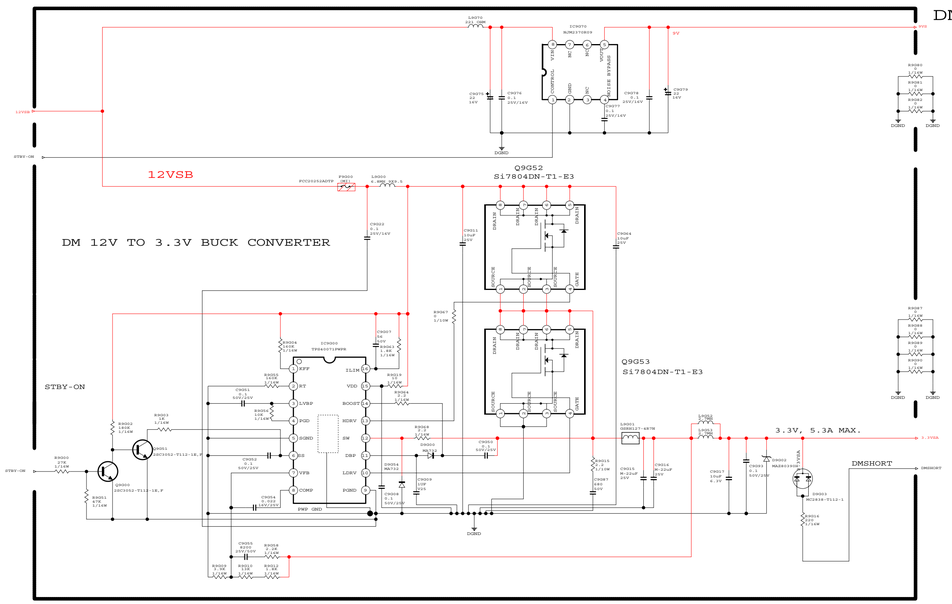
CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

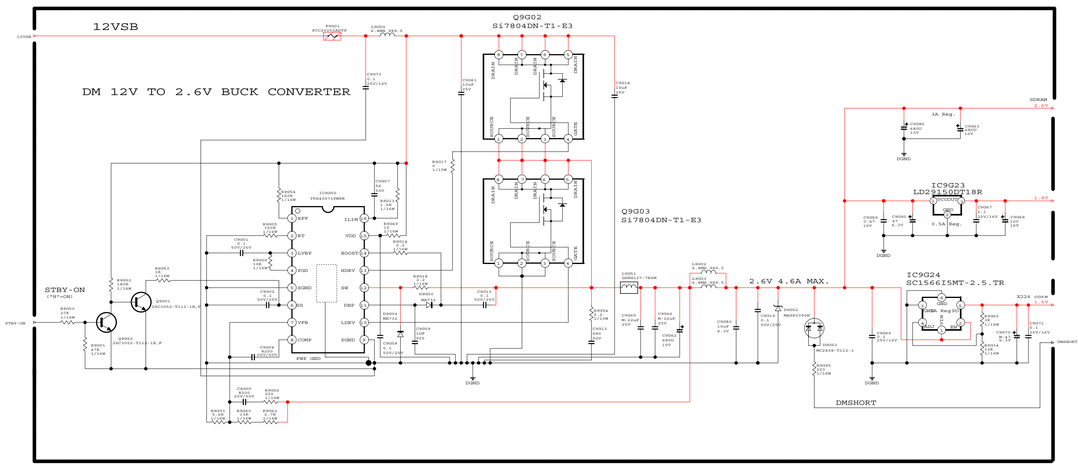
WD-52631 V33
WD-57731 V33
WD-65731 V33

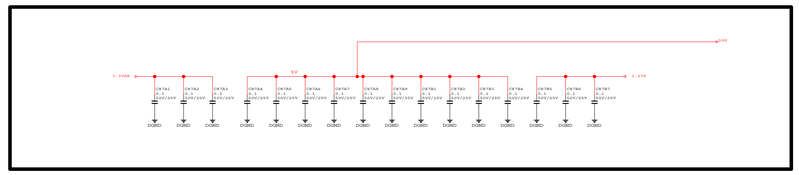
PG 20....DM12 [DMDCDC]

DM DC/DC1

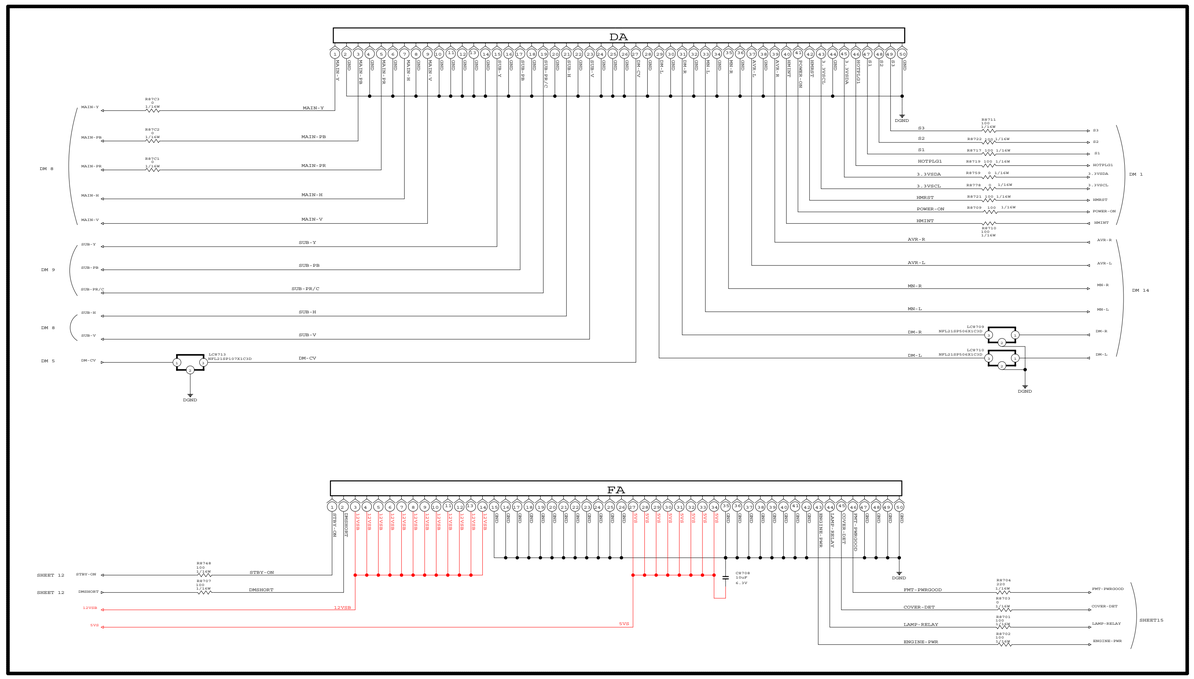


DM DC/DC2





INTERFACE CONNECTORS FOR SIGNAL



CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/P]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

PG 21....DM13 [DVI]

DM 10

IC8F01

SiI7170CMSU

IC8F03
BA33BC0FP-E2

J8F01
TO ENGINE

DM 15

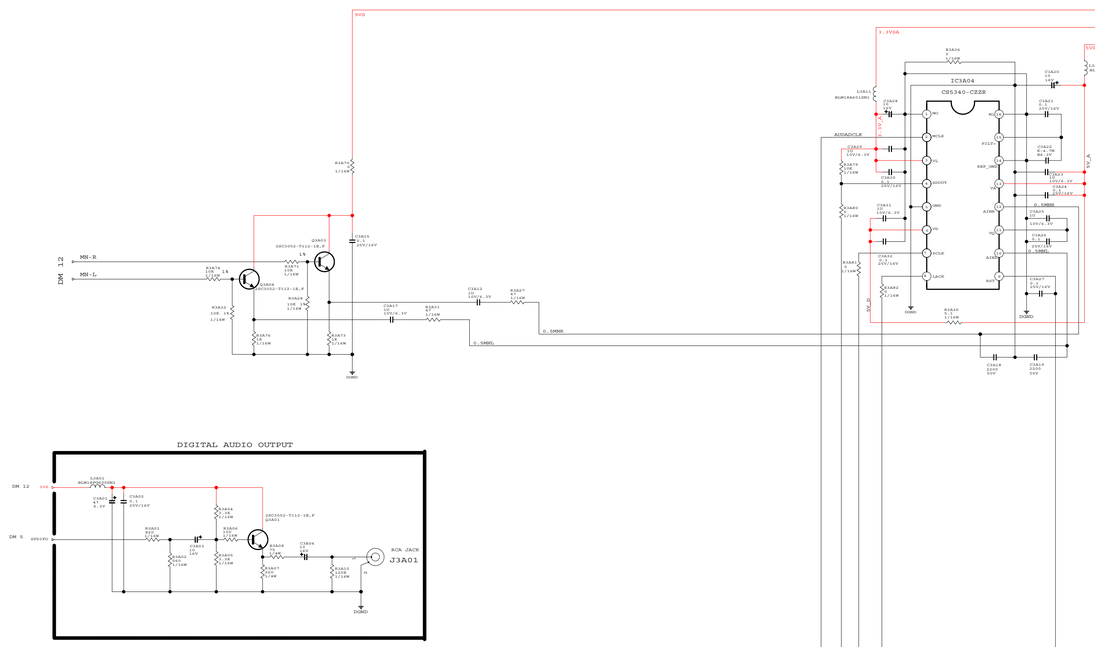
	DEPO
24 bit	H
30 bit	L

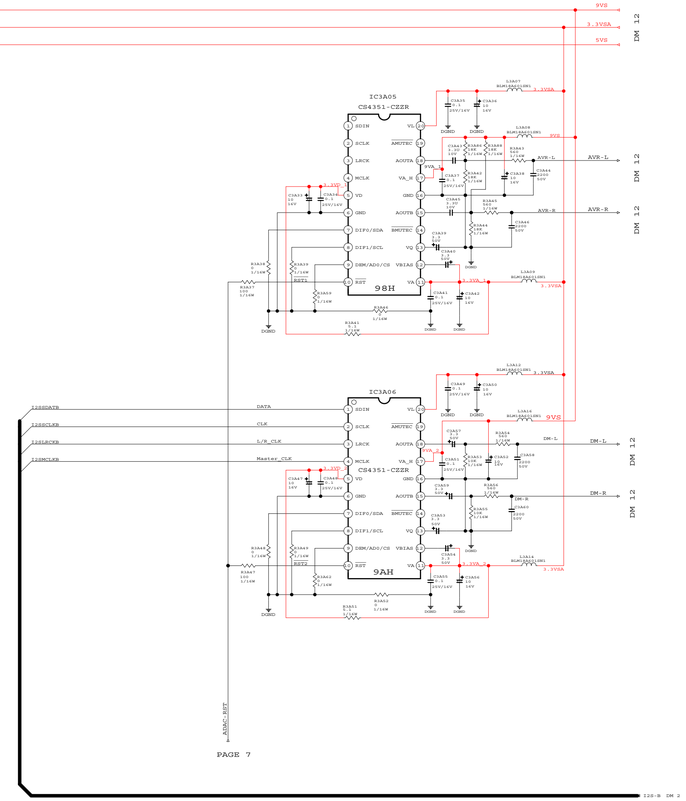
CONTENTS

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/P]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [FMTMICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 22....DM14 [DMAUDIO]



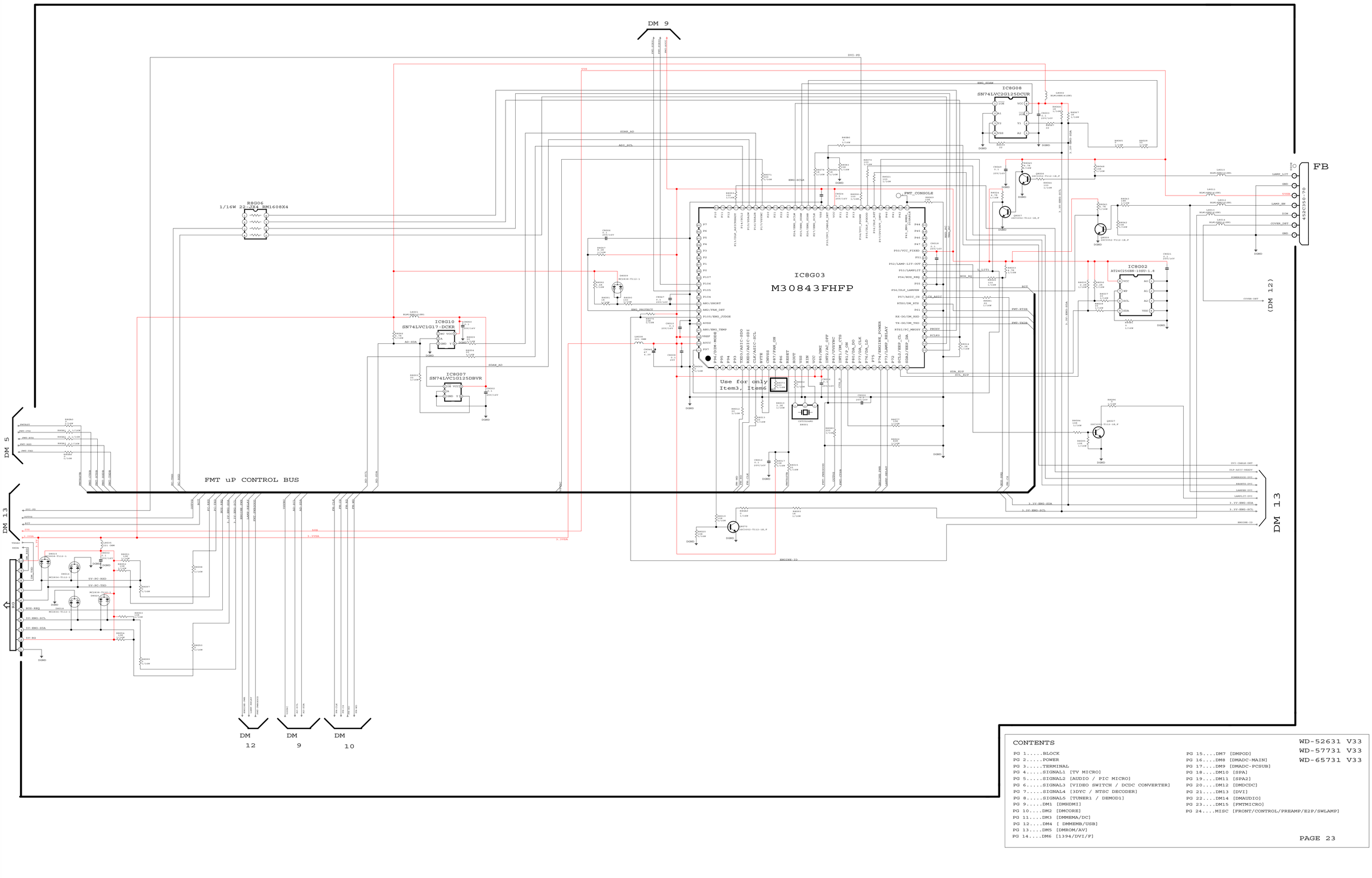


CONTENTS

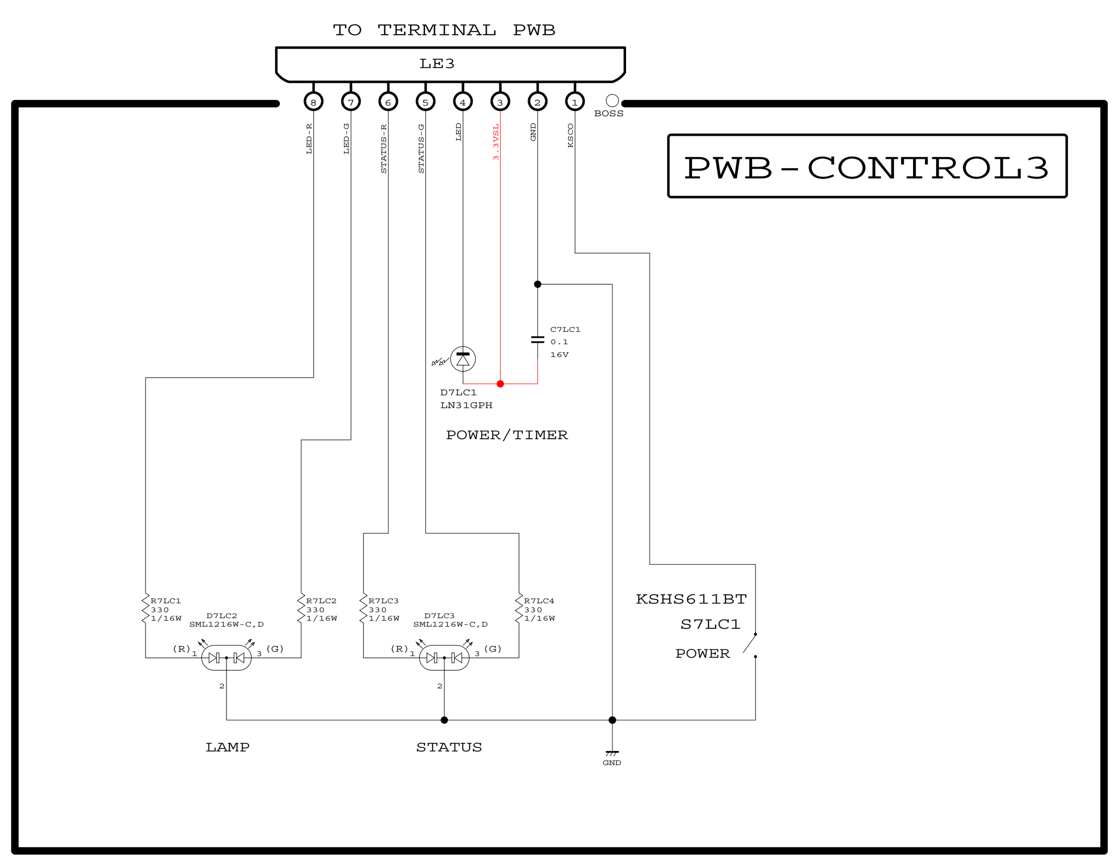
WD-52631 V33
WD-57731 V33
WD-65731 V33

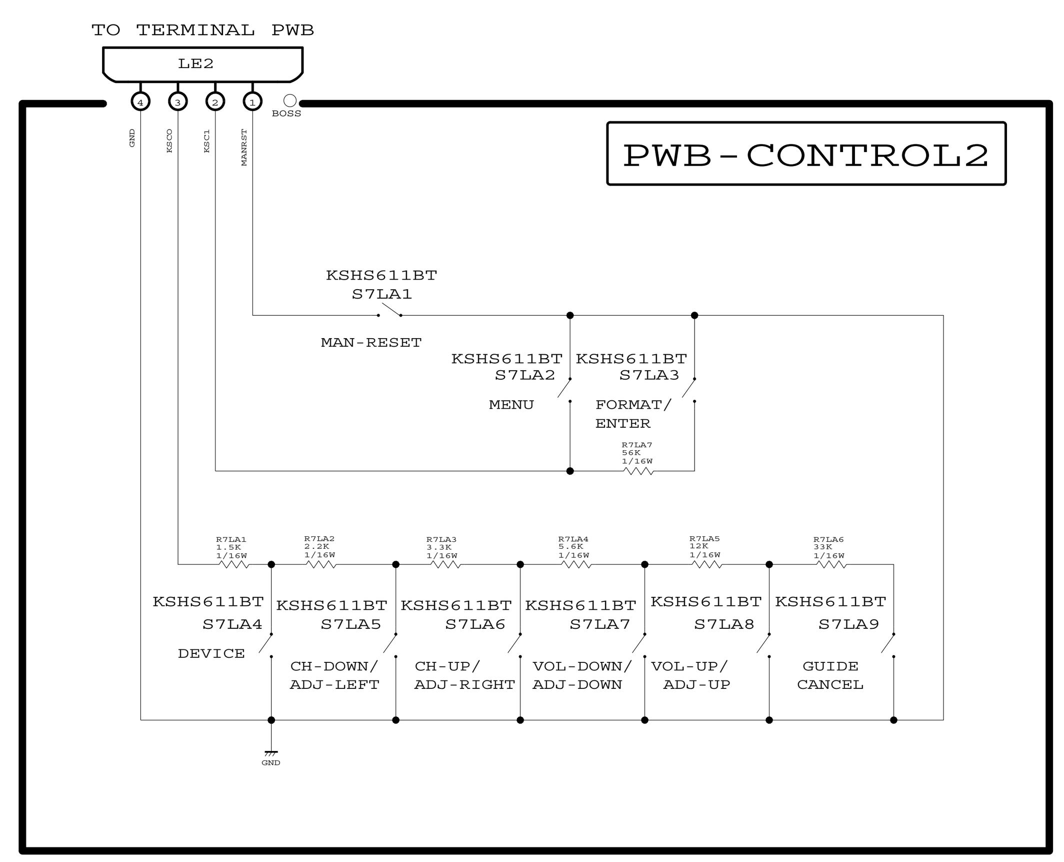
PG 1....BLOCK
PG 2....POWER
PG 3....TERMINAL
PG 4....SIGNAL1 [TV MICRO]
PG 5....SIGNAL2 [AUDIO / PIC MICRO]
PG 6....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7....SIGNAL4 [3DYC / NTSC DECODER]
PG 8....SIGNAL5 [TUNER1 / DEMOD1]
PG 9....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
PG 23....DM15 [PMTNICRO]
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

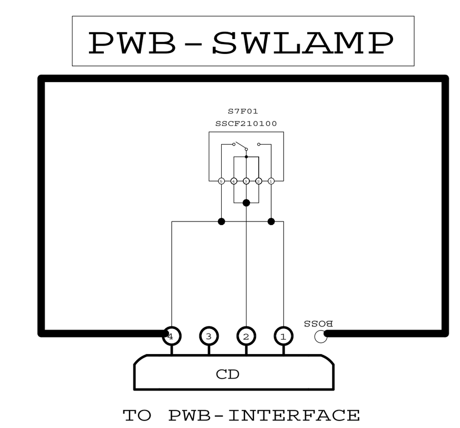
PG 23....DM15 [FMTMICRO]

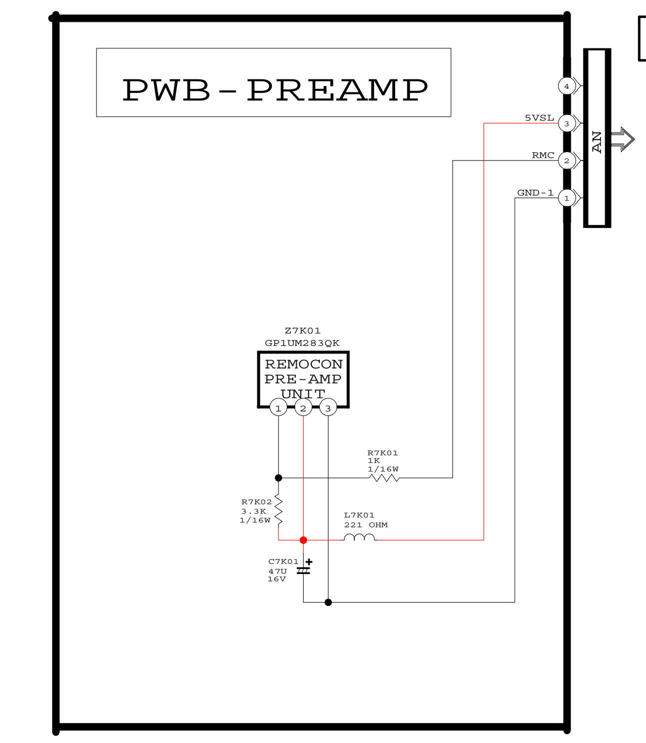


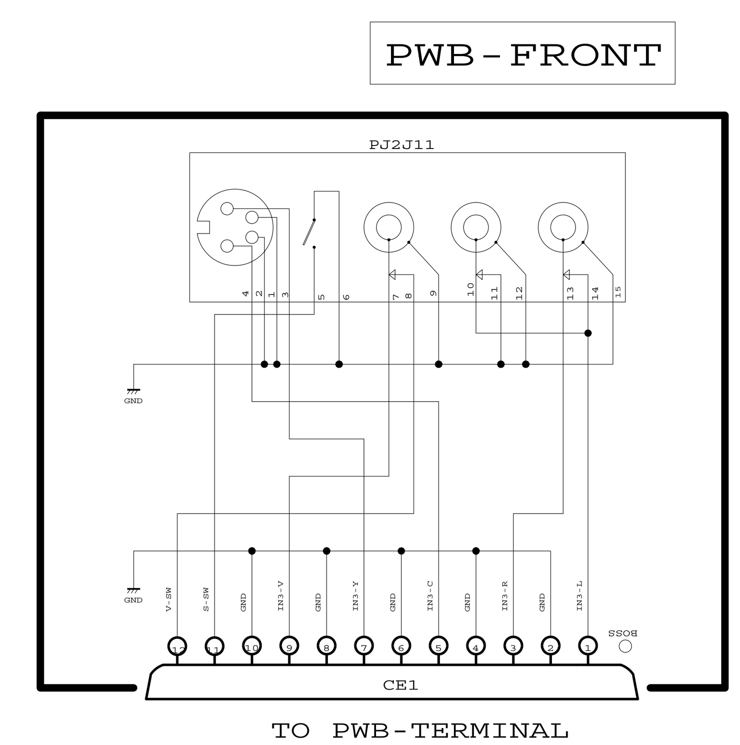
PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]

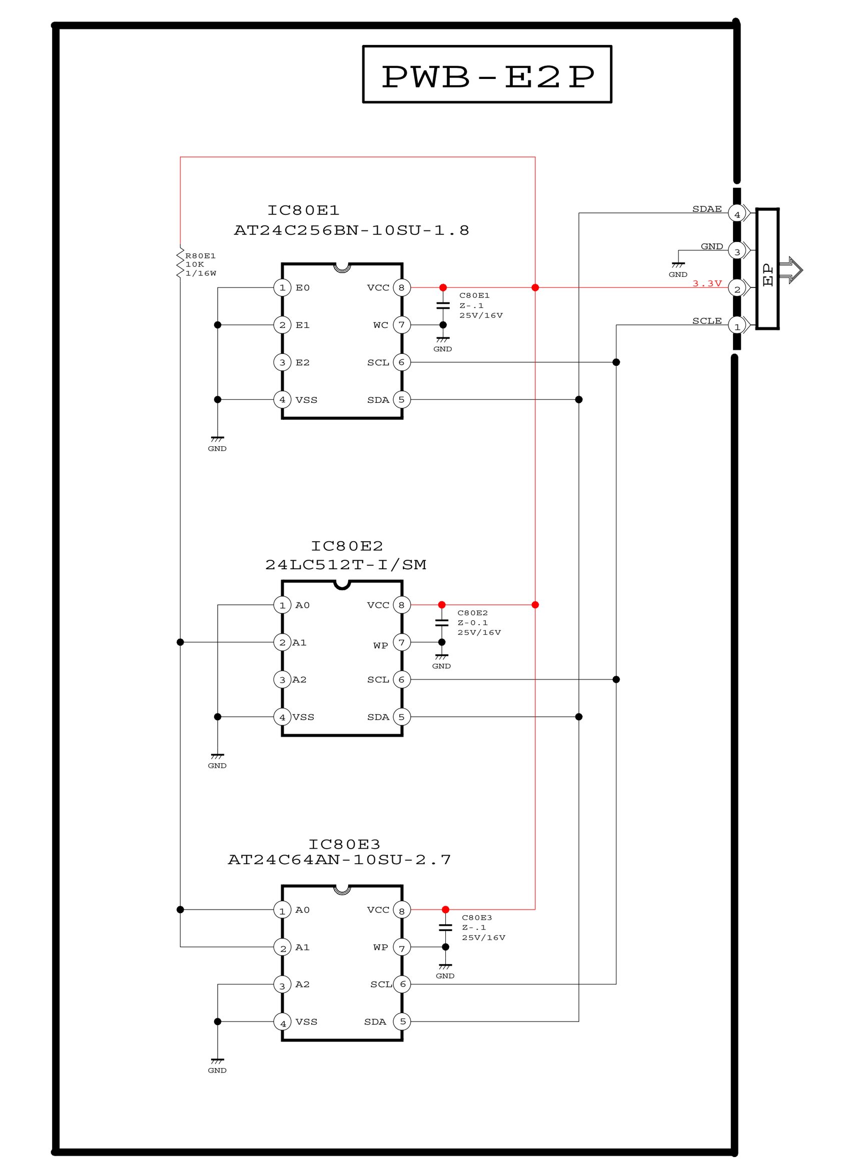


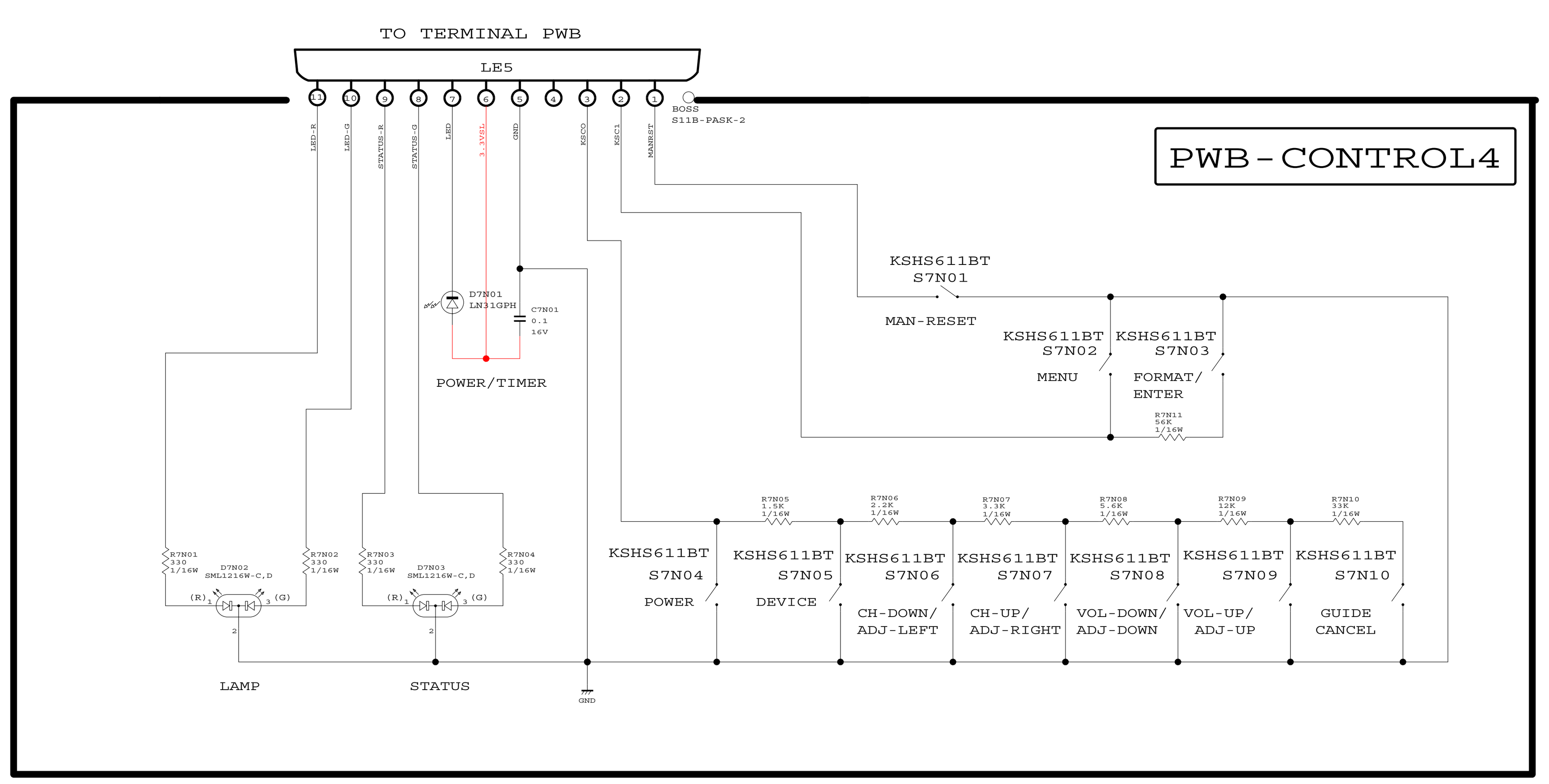


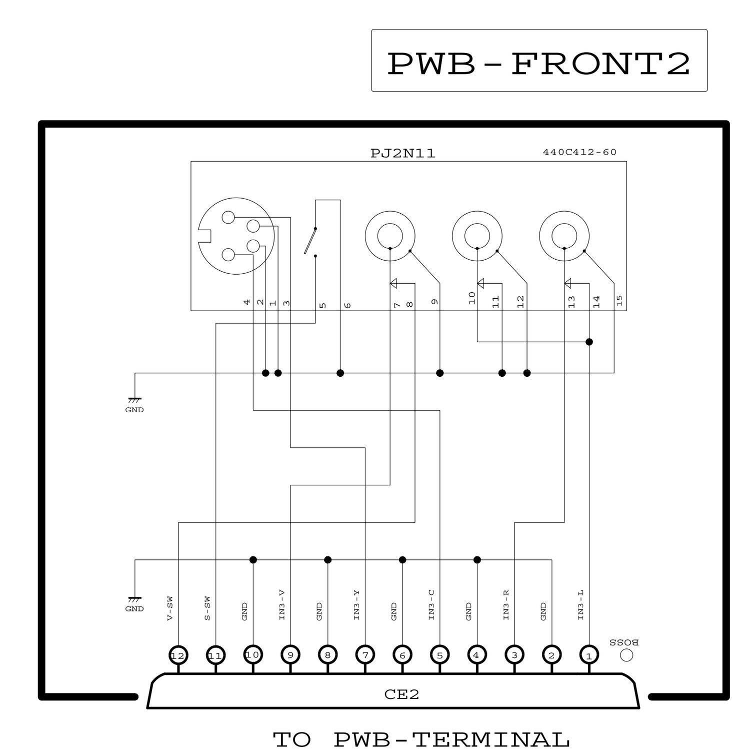












CONTENTS

WD-52631 V33
WD-57731 V33
WD-65731 V33

PG 1.....BLOCK
PG 2.....POWER
PG 3.....TERMINAL
PG 4.....SIGNAL1 [TV MICRO]
PG 5.....SIGNAL2 [AUDIO / PIC MICRO]
PG 6.....SIGNAL3 [VIDEO SWITCH / DCDC CONVERTER]
PG 7.....SIGNAL4 [3DYC / NTSC DECODER]
PG 8.....SIGNAL5 [TUNER1 / DEMOD1]
PG 9.....DM1 [DMHDMI]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [1394/DVI/F]
PG 15....DM7 [DMPOD]
PG 16....DM8 [DMADC-MAIN]
PG 17....DM9 [DMADC-PCSUB]
PG 18....DM10 [SPA]
PG 19....DM11 [SPA2]
PG 20....DM12 [DMDCDC]
PG 21....DM13 [DVI]
PG 22....DM14 [DMAUDIO]
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PG 24....MISC [FRONT/CONTROL/PREAMP/E2P/SWLAMP]